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MEDICAL DIRECTIONS

FOR THE USE OF

NAVIGATORS and SETTLERS,

IN

HOT CLIMATES.

By THOS. M. WINTERBOTTOM, M.D.

Physician to the Colony at Sierra Leone.

What dire necessities on every hand
 Our art, our strength, our fortitude require!
 Of foes intestine what a numerous band
 Against this little throb of life conspire!
 Yet science can elude their fatal ire
 Awhile, and turn aside death's levell'd dart,
 Sooth the sharp pang, allay the fever's fire,
 And brace the nerves once more, and cheer the heart,
 And yet a few soft nights and balmy days impart.

BEATTIE'S *Minstrel*.

SECOND EDITION.

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MEDICAL DIRECTIONS

FOR THE USE OF

NAVIGATORS and SETTLERS

HOT CLIMATES.

BY THOMAS M. WHITTISTON, M.D.
Physician to the College of Surgeons

What the navigator or settler needs to know of the climate of the tropics, and of the diseases which are prevalent in those regions, is the subject of this work. It is intended to be a practical guide, and to contain such information as will enable the reader to avoid the common errors and dangers of tropical travel. The work is divided into two parts. The first part contains a general description of the climate of the tropics, and of the diseases which are prevalent in those regions. The second part contains a description of the diseases which are prevalent in the tropics, and of the means of preventing and curing them.

SECOND EDITION



TO THE
Chairman and Court of Directors
OF THE
HON. SIERRA LEONE COMPANY,
THE FOLLOWING
MEDICAL DIRECTIONS,
DRAWN UP AT THEIR REQUEST,
ARE
RESPECTFULLY PRESENTED
BY THEIR
OBEDIENT SERVANT,
THE AUTHOR.

MEDICAL DIRECTIONS, &c.

THE medical directions contained in the following pages were originally written at FREETOWN on the coast of AFRICA, for the use of such trading vessels in the service of the SIERRA LEONE COMPANY as were unprovided with surgeons.

Having been favourably received, and applied, on many occasions, with a beneficial effect, they are now presented to the public under an enlarged form, with the hope that they may become more extensively useful to Europeans, whose pursuits, in hot climates, often lead them into situations where medical assistance cannot be obtained.

The directions are purposely written in a plain, familiar manner : in order to render them more intelligible, and more easily applicable to practice, a few cases have been added of persons labouring under some of the diseases described. Technical terms have been carefully avoided, and no expressions are used but such as, it is presumed, must be well understood by the generality of readers.

The methods of cure recommended are for the most

part such as the author found successful during his residence at Sierra Leone, where, for nearly four years, the health of more than fourteen hundred persons was entrusted to his care.

Europeans, upon their first entrance into a tropical country, are too apt to have their minds impressed with ideas of danger from the climate. The great increase of heat is the first inconvenience they experience, and in general that which they most dread; the excessive and often stifling heat of the nights being such as to make persons unaccustomed to it, apprehensive lest they should never be able to bear it. This dread of the effects of heat is however wholly unnecessary: strangers in a short time not only become reconciled to the greatest degrees of it, but even feel a chilliness and uneasiness when the air is a little colder than usual.

An eruption of what is called the **PRICKLY HEAT**, is generally the first sensible change produced on the body by a very warm climate: it consists of a number of small red spots, somewhat resembling flea-bites, and chiefly spread over those parts of the body which are covered by clothes, particularly the inside of the arms and thighs, the breast and forehead. This eruption is attended with a very troublesome itching, which is increased by warm liquids or warm clothing: the spots are also rendered more numerous by the same means. The Prickly Heat is always considered as a mark of health; and in consequence of this idea, many persons suffer great anxiety on its disappearance, or if they have not so extensive an eruption of it as their neighbours: hence they are induced to drink warm tea or punch, and use warmer clothing, which seldom fails to bring out a larger crop, and to make them

them uncomfortable from the violent itching connected with it. More attention is certainly paid to this eruption than it deserves. A person affected with it is indeed generally in good health; but the skin may be full of it one minute, and the next scarcely exhibit a single spot, without any material consequences. The disappearance of the eruption is an effect rather than the cause of internal disorders; and its reappearance on their decline, is to be considered merely as a sign of returning health. Some persons have a greater quantity than others, without enjoying a better state of health; some never have it at all, and yet continue perfectly well. The eruption becomes gradually less frequent, and for the most part wholly disappears when a person has resided a few years in the country. All the care it requires is to keep moderately cool, to avoid drinking warm liquors when the itching is severe, and occasionally to take a very gentle dose of salts.

Settlers in a tropical climate are usually impressed with an opinion that they should be bled soon after their arrival, especially if they be troubled with a head-ach; but this I am convinced is unnecessary, and moreover often dangerous, as it exposes those on whom it is employed to an attack of fever which they might otherwise have escaped. It may perhaps be deemed improper to lay down a general rule respecting this point: I think myself however justified by experience in asserting, that blood-letting ought never to be practised excepting where the lungs are affected with inflammation, a case which very rarely happens.

The great increase of the quantity of bile being another frequent cause of uneasiness, emetics are given on the first sensation of a bitter taste in the mouth, or when any slight disorder is felt in the stomach. This practice however proves nearly as dangerous as blood-letting, and is often

followed by irreparable mischief. The best mode of proceeding is to trust intirely to nature. Those who never seek for bile, will perhaps never be troubled with it. In any case, a discharge of bile may be produced by giving a strong emetic ; but it should be observed, that the bile seldom appears till towards the latter end of the operation, when the straining or retching continues after the stomach has been emptied of its contents. An emetic repeated every day would always be attended with the same consequences. If a person cannot be convinced that his stomach is free from bile, and if he feel a slight head-ach and uneasiness at the stomach, let him rather endeavor to carry the offensive matter downwards, by taking a gentle dose of salts, castor oil, or two or three of the purging pills.

The unpleasant feelings above-mentioned mostly arise from a costive state of the bowels, a circumstance which requires particular attention. Every person ought to have one or two evacuations in the day, and if inclined to costiveness he should endeavour to overcome it by attention to diet, as by taking a larger proportion of vegetables, and by a moderate use of ripe fruits, as pine apples, oranges, plums, &c.

Another pernicious practice remains to be noticed, which is, the custom of taking a dose of bark, or bitters, every morning. This is done with an idea of preventing fever, and may have arisen from the observation that persons were more liable to be affected by the cause of Fever early in the morning than at any other time, which is undoubtedly true : still the practice of taking bitters is not advisable. An early breakfast is an equally sure preventive ; and medicines are only proper occasionally, as for those who are obliged to expose themselves to the

morning

morning air with an empty stomach on wooding or watering parties. If they be taken constantly, the intended advantage is not only defeated, but in case of real sickness, a much larger quantity of them than usual becomes requisite in order to produce any effect. Should these medicines taken in the morning be mixed with wine or spirit they act merely as a dram, and insensibly bring on the dreadful habit of drinking spirits: when mixed with water they are certainly less objectionable, yet are by no means so effectual as a breakfast taken early in the morning.

Smoaking tobacco is much recommended as a preventive of fever, especially during the rainy season; it is however a hurtful practice, tending to produce a constant thirst and sickness at stomach, which is only to be overcome by long practice, in the same way as a man may learn to eat hemlock without being affected by it. It likewise occasions a great waste of spittle, whence the stomach is deprived of a fluid necessary to digest the food: and very commonly a loss of appetite follows. Besides, tobacco smoke has no more effect in guarding against fever than the smoke of gunpowder, tar, oakum, &c. the supposed advantage of it being merely alleged as an excuse for taking what custom has rendered agreeable. Its benefits with regard to drying or purifying the air in houses, might be obtained by burning the herb in a chafing dish, &c. as no additional good effect is to be expected from drawing the smoke of it through the mouth, those who settle in warm climates should not be induced from mistaken notions, to begin a practice so highly detrimental to their constitutions.

A sudden change in diet from the use of animal food to that of vegetables, is a plan as improper as any hitherto

mentioned. Animal food may be taken once a day: it seems best to join with it a large proportion of vegetables: but in regulating this proportion every person must be left to his own prudence. Those who have used a full diet in a colder climate may indulge a little more than others who have lived sparingly. If they judge it proper to alter their plan, the change should be very gradual. With regard to the particular articles of food, tea, coffee, chocolate or cocoa, with bread and butter or rice, make the best breakfast, and are indeed most in use. Beef, mutton, fowls, fish, &c. with yams, rice, and other vegetables, may be used for dinner. In general three meals a day will be found sufficient; an early breakfast, a dinner about one o'clock, and tea or supper at sun-set. Sometimes the appetite is so much weakened by sickness, &c. that some slight refreshment is requisite between breakfast and dinner: this will depend however entirely upon habit. It is the custom of the natives of Africa to use with their food a proportion of the red pepper, or capsicum, and it seems right to imitate their example; the stomach being so weakened by excessive perspiration, that without something warm, there is often not the smallest sensation of appetite for food.

With respect to drink, Madeira, Teneriffe, and Port wines are the best, either alone, or mixed with water. London porter is also very pleasant and wholesome: but as the perspiration is so greatly increased, it is requisite to use a larger proportion of fluids than in colder countries, in order to supply the waste; for which purpose spruce beer, especially when brisk, is one of the most agreeable drinks. Water alone does not
quench

quench the thirst, nor is it advisable to drink it so, especially for those who have been previously accustomed to something stronger. Punch and lemonade, though very agreeable, are not so wholesome as spruce-beer. Spirits, in every form and however reduced by water, are bad. Acids are grateful and very effectual in quenching thirst; yet a continued use of them weakens, and very much injures the stomach. In short, moderation in eating and drinking, though of the utmost importance to the preservation of health, can only be recommended in general terms, which must be adapted by each individual to his own case and circumstances. By temperance and care many persons remain free from harm in the most unfavourable situations; whereas an irregular diet, and fits of intoxication, often suddenly bring on diseases, or render previous complaints inveterate, which would otherwise have been of little consequence. There is a saying, that nothing can hurt a drunken man: it is however certain, that as soon as the effects of liquor cease, his constitution becomes much more liable to be affected by disease than it was before. Several instances may perhaps be found of persons, who, during a long residence on the coast of Africa, have been intoxicated as often as they could procure liquor, and yet retained a tolerable state of health; but the many thousands who have perished by inconsiderately following the same practice, have never been taken into the account.

The clothing ought to be light, but sufficiently warm to guard against sudden changes from heat to cold. Cotton and flannel are the best articles for dress. Short jackets, with trowsers reaching to the ancles, and fastened by strings or buttons, are most convenient: where stock-

ings are not worn, socks should be used in their stead: the practice of going without shoes is highly improper. Hats with high crowns, or with a handkerchief put in them, are of great service in protecting the head from a hot sun. The use of flannel next the skin cannot be too strongly recommended; for although the first wearing of it may produce some trifling inconveniences, such as, an itching in the skin, and an increased eruption of the prickly heat, yet these seldom last longer than a few days. By constant use, the wearing of flannel becomes remarkably pleasant, and to it many persons are indebted for the preservation of their health and lives in very hot climates. Being defended with flannel, they have suffered no inconvenience, even when exposed to the tropical rains for whole days and nights in open boats, or in the woods; while others, neglecting to use the same precaution, were presently after seized with fevers. During the rainy season, the air often feels raw and chilly; and the changes from heat to cold are more sudden than at other times: but although the good effects of flannel are then more apparent, it is nevertheless extremely beneficial in the dry season also; after violent perspiration a linen or cotton shirt becomes wet and always cold to the back, which never happens when flannel is worn. Any considerable alteration of the temperature of the air requires a proportionate change in the dress. Those especially who are exposed to the night air should put on additional clothing. In the rainy season, woollen clothes will be found both comfortable and necessary. It is a very frequent custom with those who have resided long in Africa, to wear only a shirt and trowsers, and in this dress to expose themselves at night

night when the land breeze blows; or at other times to sit in a current of air: but, however agreeable the present gratification may be, it is always followed by a feverish dry skin, owing to a stoppage of perspiration, and very often proves a cause of violent diseases; so that it is a practice by no means to be imitated by new settlers.

Exercise, when moderate, that is, when not carried so far as to produce fatigue, is proper; care being taken to avoid the hottest part of the day*: when it produces fatigue, the health is always thereby much endangered. It may be remarked, that white people are capable of as great, perhaps greater exertions, for a short time, than the natives; but when those exertions are to be long continued, Europeans are by no means able to contend with them. Shooting parties in the woods, &c. have a bad effect on the health of new comers, and ought to be avoided: indeed, for some time after their arrival, they should be extremely careful not to expose themselves in any manner. When Europeans undertake journies in this country, they ought to drink rather sparingly. Too much fluid taken into the stomach causes oppression, loss of appetite, sickness and faintness. It will be much better to deceive the thirst by chewing some hard substance, and, on coming to pools of water, to be content with washing the mouth frequently, and dipping the hands and face into the water. Violent exertions are one cause of the great mortality among white sailors in Africa: to support the labour which they sometimes are exposed to in rowing boats, &c. they have recourse to spirits; and, not unfrequently, hard labour is followed by a fit of

* The hottest part of the day is about two o'clock in the afternoon. The coolest time is about half an hour before sun-rise.

intoxication : in that state they often pass the night amid the chilling dews, under the open sky, and are soon after affected with fevers, fluxes, rheumatic pains, &c.

One of the most important means of preserving health in a hot climate, is by going early to rest ; a moderate indulgence in sleep is there also more allowable than in Europe, but it should always be confined to the night season. Sleep during the day seldom refreshes ; it rather produces a languid and indolent state of the body, and by increasing the perspiration, relaxes much more than it does at night. Early rising, so much recommended in colder countries, does not seem to be attended with the same advantages between the tropics : the coolness of the morning is grateful ; but the heavy dews which fall before sun-rise, and the thick fog which frequently lies upon the ground till the sun has risen, render the beginning of the day unwholesome. At this time also, the stomach being empty, the body is more liable to be affected by fever, than at any other time of the day ; more especially in uncultivated and marshy places.

Cold bathing is much used in the West Indies, and is often recommended to those who are recovering from a long illness. At Sierra Leone it has been but seldom employed, and scarcely ever with advantage. Many persons have had returns of the ague soon after leaving the water, though they had not staid in it any length of time. The coolness which is felt after bathing is very grateful, but it soon goes off, and renders the body more liable to be affected by the heat of the air than before. This is not the case with the *warm* bath, which when used after exercise in the hottest sun-shine, not only relieves the present fatigue, but also leaves a most agreeable coolness

coolness on the skin. It may therefore be used with great advantage two or three times a week.

The careless, and too often dissolute habits of life of common sailors, expose them to various diseases; but after what has been already said, the mode of treatment applicable to them may be comprized in a few words. They should breakfast early, in the cool of the morning; and where tea * or coffee cannot be allowed, boiled rice, with butter or molasses may be used in its stead. Spirits ought never to be given to them without water; but if spruce beer could be substituted in place of these destructive liquors, it would be attended with the most happy effects. As far as is consistent with the duty of the ship, the men ought to be guarded by an awning from the heat of the sun. They should be forbidden to sleep upon the deck at nights; and lastly, they should be prevented from going without shirts and hats, with nothing but a handkerchief tied round their heads. In procuring wood and water for the ship's use, and in rowing boats, it will be much better to employ natives of the country than European seamen. Captains of ships ought frequently to inspect their men; and when any of them appears to droop, he should be obliged to leave off work. It not unfrequently happens, that a man has symptoms of fever hanging upon him for a day or two, or even longer, but does not choose to make any particular complaint, vainly supposing he shall be able to remove the

* As a proof of the advantage derived from an allowance of tea or coffee, it has been observed, that the use of either of them often induces sailors to forego the drinking of strong liquors, and their favourite but destructive grog. After hard labour of any kind, tea is the most cordial and refreshing liquor that can be drank.

disagreeable sensations he feels, by work and exercise. In this way many valuable lives are lost, and those sudden deaths occur of which we so frequently hear; for by such attempts to resist the accession of the disease, many cases are rendered fatal, which by rest and timely care would have proved trifling. The present subject cannot be better closed than by quoting the observations of one of the most eminent* physicians of the present time, which tend to shew the dreadful effects of drinking spirits: these observations are peculiarly applicable to my purpose, for in no part of the world have the sacrifices to this baneful habit been so great as on the coast of Africa, where it may be with truth asserted, that "half the diseases which are said to be produced by warm weather," "are produced by the spirits which are swallowed to lessen its effects upon the system." "The effects of spirituous liquors upon the human body are sometimes slow in their appearance." "It would take up a volume to describe how much other disorders natural to the human body, are increased and complicated by them. Every species of inflammatory and putrid fever, is rendered more frequent and more dangerous by the use of spirituous liquors."

"In the use of spirits, there are certain progressive stages which deserve to be mentioned. Men begin generally by drinking them in a diluted state, at dinner only. They next drink them in the same state in the afternoon and evening. In the course of a few years they call for them in the forenoon, and soon afterwards before breakfast, increasing their strength from time to time, until they finally drink them in an undiluted state during every

* Dr. Rush of Philadelphia. — Compare Dr. Willan's

"Reports on the Diseases in London." p. 132—6.

hour of the night. I have known several persons who have passed through all the above stages of intemperance, in whom the pulse of life seemed to be supported for several months before their death only by drinking from one or two quarts of raw spirits every night." "When the body has been long exposed to wet weather, and more especially if cold be joined with it, a moderate quantity of spirits is not only proper, but highly useful to prevent the weakness which often follows and becomes a cause of fever." This is the only case that can occur, where spirituous liquors are innocent or necessary.

It was formerly an opinion, that the diseases to which settlers in a new country were subject, entirely arose from a change of climate, and therefore could not be prevented. Experience dearly bought has however at length taught us better, and shewn that, in every country, there are some places more sickly than others; and also that the distance is often very small between an unhealthy and a healthy situation. It has been also sufficiently proved, that there are certain causes which in every country, more especially in warm climates, will produce fever. The most common, and also the most fatal of these causes, is the vapour arising from swamps and marshes*, or spots of ground, partly covered with mud, and partly

* Though the most common cause of fever in hot climates be the air which blows over marshes, yet when the fever is once introduced among a number of people, it is very apt to become infectious, and spread where the original cause does not reach: this is only to be avoided by keeping the sick in cool, airy places, apart from others; by paying the strictest attention to cleanliness, and by putting the clothes of the patient into water as soon as he changes them, which ought to be done every day. All bad smells must be prevented as much as possible, by sprinkling a little vinegar upon the floor frequently in the day.

with

with water. A stranger who goes into the fens of Lincolnshire, or into any of the marshy parts of England, will not long escape an attack of fever, though the inhabitants, from custom, find no inconvenience. The hotter the season of the year is, the sooner and more severely will his disorder be felt: whereas had he gone there during a severe frost, he would have escaped so long as the cold continued. Great degrees of heat are very seldom the cause of disease. The hottest part of the dry season between the tropics, in dry situations, is far from being unhealthy: it is only when moisture is added to heat, that feverish disorders are produced: and hence it is, that the rainy season proves so dangerous. In low wet situations, the sickness is then greatly increased, the slime and mud which is left on the banks of rivers infecting the air with noxious exhalations which few Europeans can bear. Large lakes, though their vicinity is by no means a situation to be chosen, have not such bad effects while full; but as soon as the water becomes so low that the bottom is seen dry in various parts, diseases are astonishingly multiplied. The smell arising from mud is found very offensive on going up small rivers or creeks lined with thick mangroves; and when this is perceived it may be with certainty concluded that the place is unhealthy.

Persons living to windward of a marsh or swamp, though at no great distance from it, may enjoy a good state of health; but if they are to leeward of it, even at a considerable distance, their situation will certainly prove unhealthy. It is not easy to say at what distance from a swamp the wind which blows over it loses its hurtful qualities; we have however reason to suppose the distance
is

is at least a mile. Persons living to leeward of a marsh, and at no great distance, have often had their health preserved by trees growing between them and the marsh: in such situations therefore trees ought not to be cut down: but it is surely most prudent to avoid such places altogether. The precautions taken by those who live on shore with respect to situation, ought also to be observed in stationing ships. It has often happened in fleets lying at anchor off a swampy shore, that the ships nearest to it have proved very unhealthy; some of their people dying every day, while the crews of vessels distant from it a mile or more remained in perfect health. When ships are obliged to continue long in such unfavorable situations, every possible care should be taken to counteract their bad effects: it has been found very useful where the vessels ride head to wind, to have a sail stretched across the fore part of the ship, the cook's hearth being placed behind it, so that the smoke may go over the vessel. When the side of the ship is exposed to the wind from the shore, the ports on that side should be kept constantly close. In such situations also it will be found of much use to smoke the ship frequently between decks: this may be done by burning tobacco, junk, gunpowder, &c. in a common iron pot, or by carrying a fire into different parts of the ship: the dampness of the air is thus most effectually destroyed; and to the moisture of the air, we must refer a great part of its hurtful effects. The ill consequences of an unhealthy situation are more severely felt by those who pass the night in it: by returning to sleep on board their ships, the men often escape the danger; but if they remain all night on shore, however well accommodated with beds, they are very liable to be affected

affected with sickness. The crews of boats employed in wooding or watering, who stay all night on shore, or remain there some time after sun-set, are very frequently cut off by fevers; and this has happened two or three times to the same ship during a short stay at one place. The bad effects of this exposure in an unhealthy country do not always immediately appear: they are sometimes not felt in less than a week or ten days after leaving the place and getting out to sea. It has also been found that a hot, damp air, independently of situation, may produce sickness on board of ships, though every possible care be taken to keep them clean and comfortable. When therefore a vessel is washed between decks, no person should stay below until the whole be thoroughly dried by having the ports open, by placing fires in different parts, making a smoke, &c. The latter should also be practised at least twice a week in stormy weather when the ports cannot be opened. In damp weather when on shore, when sugar and salt turn moist, when paper becomes so damp as scarcely to bear writing, when iron rusts, and when leather becomes mouldy, fires ought to be made at different times in the day, and the houses well smoked, to dry the air, but more especially bed rooms. Those who live in houses, the walls of which are plaistered with mud, frequently during the continuance of hot weather, wet the walls and floor to cool the air; this is a very hurtful practice, as it renders the air moist and brings it nearly into the state it is in during the rainy season; thus producing sickness, particularly a return of the ague in those who have had it before. When vessels lie in these unhealthy stations, it will be found of great use to wear warmer clothing, especially woollen or flannel, and in case

case of getting wet, it is scarcely necessary to observe that the clothes should be immediately changed. Persons returning home with wet or cold feet may sometimes prevent the disorders thence occasioned by washing their feet with spirit.

The signs of an unhealthy country are great swarms of flies, musquitoes, &c. thick fogs lying upon the ground for some time after sun rise, heavy dews, and very cold nights succeeding very hot days, thick mangroves lining the banks of rivers on a flat shore not much higher than the surface of the water.

Healthy situations are those where the soil is dry and elevated, as upon the sides or summit of a hill, at a distance from marshes and stagnating waters: although the banks of a running river are much more wholesome than standing water, yet such a situation ought not to be chosen, being not always a healthy one. Some situations are rendered much hotter than others in the neighbourhood by a sandy or rocky soil reflecting the heat; or from being low and surrounded by high hills. In general, places open to the sea, bordered by a sandy or gravelly beach, free from slime and ooze, are preferable to all others: besides being more healthy, they are also cooler, and not exposed to such sudden changes from heat to cold as places farther inland. A change of situation has often been found of great use, when patients have been recovering from a fit of sickness, or have had frequent attack of it in the same place. It is more particularly useful where agues, through mismanagement have become inveterate, returning as it were by habit. In such circumstances a change of place frequently brings immediate relief,

relief, which however is not always of long continuance: when therefore the patient feels himself relapsing into his former state, he must remove again to another situation, or even return to the place he last quitted; and by doing so two or three times he will in general recover his health. Sometimes the removal for a short time even into a less healthy place, has been found of service in intermitting complaints; care being taken that the situation be tolerably dry, and not in the neighbourhood of swamps. A great part of the benefit arising from such changes, may perhaps depend upon the relaxation they afford to the mind from the cares and anxieties of business.

Violent gusts of passion, peevishness, and fretfulness, lay the foundation for a variety of disorders. A cheerful, easy temper is found to contribute much toward the preservation of health. Too great care and anxiety of mind, even when employed on the preservation of health, is the most certain means of losing it. Anxiety and apprehension render the body more liable to be affected by infectious diseases; and in sickness, too frequently cause the complaint to terminate fatally. A sea voyage has been much commended as a means of restoring health; and when the vessel immediately leaves the coast it will undoubtedly be found so; but vessels trading upon the coast are not so suitable for the purpose, being never at such a distance from the land, as to afford any material change of situation: they are also liable to meet with frequent calms, in which case the heat becomes much more uncomfortable than it would be on shore.

Those who will take the trouble of attending to the
means

means above recommended for the preservation of health, may probably find themselves as little affected with sickness in Africa, or the West Indies, as if they had lived in the healthiest parts of Europe. On the other hand, those who will pay no attention to themselves, are for the most part such as could not long expect to enjoy good health in any climate.

Before an account is given of the diseases to which Europeans are liable in hot countries, it may not be amiss to notice some complaints frequently occurring on

SHIP-BOARD.

SEA SICKNESS, though in general only a temporary inconvenience affecting those unaccustomed to the sea, is sometimes so severe and distressing as to become a serious disease. If it cannot instantly be removed, it may at least with care be much moderated. At first the sickness may be encouraged by taking a few cups of tea, or warm water, which will cleanse the stomach and render the retching less severe. In a costive state, it will be proper to take two or three of the purging pills. When the bowels are opened, if the stomach has been much weakened, and continues still irritable, five or ten drops of tincture of opium may be taken in a little warm water, and if the sickness does not abate in a couple of hours, it may be repeated; or, a tea spoonful of brandy added to a table spoonful of warm water may be taken instead of the former. When the stomach appears somewhat settled, a little food of a light and nourishing quality ought to be used, such as Sago, Tapioca, Saloop, or Indian Arrow Root, to which may be added a little
Sherry

Sherry wine or brandy: only a few spoonfuls should be taken at a time, and repeated at the interval of an hour or two. Portable soup is also a convenient form of exhibiting nourishment, and will be found highly useful. The patient ought to go upon deck, and remain as much in the centre of the ship as possible. Should the sickness still continue, the following plan may be pursued: a tea-spoonful of magnesia must be mixed very gradually in a cup of water; to the same quantity of water in another tea cup, must be added 20 or 30 drops of acid of vitriol, sweetened at pleasure: the magnesia must be swallowed first, and the acid immediately afterwards. This proves gently purgative, and may be repeated every two or three hours. When the bowels are sufficiently open, the same good effects, unattended with purging, may be procured by dissolving a scruple or half a dram of salt of tartar in a cup of water, and swallowing a table spoonful of lime or lemon juice immediately after it; or a proportionate quantity of concrete acid of lemon may be used in its stead. Persons of weak constitutions, who are about to undertake a long voyage, particularly if in company with women or children, should be careful to provide stores independent of the ship's provisions. The ship-biscuit is not always good, and is apt to disagree with delicate stomachs. A superior kind of biscuit, and more palatable than the common sort, may be made by cutting loaves of bread into slices, and putting them into an oven until crisp: they will keep for any length of time. Milk may be preserved a considerable time by boiling it, and adding to it a quantity of sugar. As a substitute for milk in tea, the yolk of an egg may be beat up with a little hot water. Eggs may be preserved by
covering

covering the shell with grease, or what is better, varnish, or quick drying paint, &c. Fowls are generally provided by passengers, but unless particular care be taken, they soon fall sick and die. They ought to be regularly fed, and their meat should not stand till it be sour: they should also have abundance of water, but the most important part of the care consists in giving them a portion of *animal food* with their meat, as a substitute for the worms, &c. which they pick up a shore. When therefore a fowl is killed the entrails ought not to be thrown away, but should be minced small and given to the others, who will be very eager to obtain them.

SCURVY is a disease which rarely fails to shew itself in long voyages, where proper care is not paid to the health and convenience of the crew. While this disease was little understood, its ravages were dreadful, as we see in the accounts of the earliest voyages to the East-Indies. Even so late as Commodore Anson's voyage we find this disease producing the most incredible havoc. It is to the late ingenious Capt. Cook that we are indebted for the most satisfactory proof of the possibility of preserving a ship's company from the attacks of this dreadful disease. The scurvy is universally occasioned by living long upon a diet of putrid or salted meats, with little or no vegetable food, and a scanty allowance of, perhaps, bad water. These causes lay the foundation for scurvy, which however frequently lurks a considerable time in the constitution before it shews itself. Other circumstances however may have a great effect in hastening its appearance, the chief of which are, 1st. Want of cleanliness, and sleeping in foul, damp, and ill aired places. 2d. Fatigue; hence the scurvy often appears suddenly

suddenly after long continued stormy weather, or after a violent gale of wind, in which the sailors have been exposed to excessive labour at the pumps, and other necessary exertions. 3d. Indolence, with its usual attendants, dejection of spirits and despondency; hence it is observed that the worst sailors on board are always those who are first attacked with scurvy. This disease is not always attended with an uniform train of symptoms, but may be discovered by some of the following. The patient appears gloomy and discontented, averse to use the least exercise, or to join in any amusement. He feels drowsy, and is fatigued by using the slightest exertion, which generally produces a troublesome shortness of breath and cough. The gums swell, become spongy, and bleed from the slightest touch. The breath becomes extremely foetid, and the teeth loosen, and frequently drop out. Sometimes the first appearance of the disease consists in an unusual heaviness or numbness of the feet, with stiffness and inability of bending the knee joints. In some cases the muscles of the legs or arms are hard, stiff and contracted; and the legs frequently swell. The complexion becomes pale, fallow, and bloated. The patient has a melancholy dejected look: his nose frequently bleeds, and blood is poured out from various parts of the body. Red, yellowish, or purple coloured spots, of various sizes, appear upon the legs, and various parts of the body; ulcers break out upon the legs; and wounds which had been healed many years frequently open again. The slightest scratch at this time is apt to become a foul and spreading ulcer, the surface of which is covered with a loose spongy substance, called by the sailors bullock's liver, which it somewhat resembles. These symptoms, if not checked, become rapidly worse; the weakness daily increases;

increases; the patient faints from the slightest motion, and is often suddenly and unexpectedly carried off. As the scurvy is scarcely to be cured at sea, while the causes producing it continue to be applied, it points out to masters of ships the necessity of an early and strict attention to the means of preventing its appearance. The chief of these are cleanliness, proper exercise, and good nourishment. Every inducement should be held out to the sailors to keep themselves clean; and they should be obliged to shift themselves at proper and stated times. In warm weather, bathing should be encouraged, and for the convenience of those who cannot swim, as well as to prevent accidents from sharks, &c. a sail ought to be hung overboard. In dry weather, their hammocks should be daily brought upon deck and opened, so that every part of the bed clothes may be exposed to the air. As often as the weather will permit, the side ports ought to be opened, and every means used to ventilate the ship. The half-deck, and other parts where the crew sleep, ought to be frequently and thoroughly cleansed: in doing this however, the deck ought to be rather scraped than washed. When it is necessary to use water or vinegar, &c. to wash these places, the men ought not to be allowed to return into them until they be perfectly dried by large fires made in iron pots, and carried to different parts of the ship. In new ships this should be more strictly attended to, as the dampness of their timbers renders them more sickly than older and well-seasoned ships. After rainy and stormy weather it is more especially requisite to dry the ship between decks; and also to oblige the sailors to dry their clothes. When the weather turns suddenly cold, as in the high latitude of the

the Cape of Good Hope, &c. the sailors should always put on additional clothing. As nothing is more conducive to health than moderate exercise, which besides invigorating the body, serves also to employ the mind, and to prevent it brooding upon unpleasant subjects, when the necessary duty of the ship, the repairs of rigging, &c. are not sufficient to employ the crew, they should be encouraged to dance, cudgel, or use any other sportive recreation. The regulations respecting diet are not so easily put in practice: in long voyages salted meat becomes more or less tainted with putrefaction, therefore the quantity of animal food ought to be diminished, and a larger proportion of vegetable aliment used in its stead. A good stock of tea, coffee, soft sugar, and treacle ought to be laid in, which the advantages mentioned page 11, (note), has the further good effect of diminishing the quantity of animal food for diet. Now bread, where it can be afforded, is an important article, and may without much trouble be daily baked on board of ships. The grounds of porter answer pretty well as a ferment to raise the dough, but a quantity of yeast, which is greatly preferable, may be preserved with little trouble for two or three years, if kept in closely corked bottles. For this purpose the yeast must be thinly spread upon a board, and when dry, scraped off and powdered. Preserved fruits of all kinds will be found a highly useful, and grateful accommodation to scorbutic patients, who have an insatiable desire for almost all vegetables, but particularly those of an acid nature. Green gooseberries may be preserved easily for a year or more, by putting them into bottles, and afterwards covering them with water made pretty sour with acid of vitriol. A quantity of the juice

of lemons or limes, may be preserved for any length of time, by adding to the expressed juice about one-third of the quantity of spirit. A still more convenient mode of carrying the acid of lemons in small bulk, is now offered to the public by Mr. COXWELL, of Temple-Bar, London, in what he calls the concrete acid of lemons. Two ounces of these crystals added to a quart of water, render it equal in strength and medicinal virtue, to the same quantity of fresh lemon juice. One, two, or three table spoonfuls of the mixture, according to the exigency of the symptoms, may be given to the patient, and repeated two or three times a day. Spruce beer has been already recommended, and will be found particularly useful in preventing this complaint. Of equal importance with wholesome and nourishing food, is an abundant supply of pure water. A fresh stock of water ought to be laid in as often as circumstances will allow, previous care having been taken to purify the casks. Vessels going from a northern climate to a southern one, ought to have a good stock of onions, garlick, and flour of mustard; and upon their return, a quantity of the capsicum, or Cayenne pepper, when it can be procured, will be found equally useful. Medicines are not of much service in this complaint: a teaspoonful of Peruvian bark, together with fifteen or twenty drops of acid of vitriol in water, may be tried two or three times a day, with the greatest probability of success. When ulcers break out, they require the application of a carrot poultice, of yeast, or of meal, and stale beer; but they seldom heal entirely till the patient approach the land, and can procure what he most ardently desires, a supply of fruits and fresh vegetables.

As the health of seamen so much depends upon the water on board, the quality of it should be made an object

of particular attention. The following mode of preserving water perfectly sweet during long voyages, was proposed by General Bentham; and the experiment has been tried on board two sloops of war, the Arrow and the Dart, and appears to have completely answered the purpose intended. "Instead of the ordinary stowage in casks, sixteen tanks or cases, adapted to the shape of the hold, were placed in each vessel, and filled with about forty tons of water, by means of which the water occupied much less room in the ships than it would have done if casks had been made use of. The tanks were made of wood, accurately lined with sheets of tinned copper, all the junctures of which were secured by solder, so that the water was no where in contact with any thing but the surface of tin. By way of comparison, about thirty tons of water were stowed on board each vessel, in casks as usual. The water in all the tanks on board one ship, and that in thirteen of the tanks on board the other, was uniformly found to continue as pure as when it was first taken from the spring: that which was contained in the other three tanks, was more or less tainted, as that in the casks was. After the water had remained on board a sufficient length of time, it was used out, and the tanks replenished from time to time; but in some of the tanks, the water was allowed to continue three years and a half; twenty-five gallons of which, being sent to the Society for the Encouragement of Arts, &c. was found to be wholly unaltered."

Where casks are used, it has been recommended to put a couple of handfuls of quick lime into each cask, to rinse it well, and after it has stood five or six days to pour the water off, and fill the cask afresh. By this means the lime will incrust the inside of the vessel; and it has been found

found by experience, to preserve the water pure for six months. Old, seasoned water casks, especially those of oak, preserve the water much better than new ones. It has likewise been proposed, to add to each cask a handful of powdered charcoal; but a better effect will perhaps be produced by charring the inside of the staves before they be put together. The only method of rendering again fit for use the water after it has become putrid, is to expose it freely to the air by a machine invented for that purpose, and used in the navy; or in its stead may be substituted a cullender, or perforated vessel, through which the water must be repeatedly passed, and allowed to fall from a height like a shower of rain.

Those who wish to obtain fresh water at sea, should understand that the steam of salt water is as pure and free from salt, as that which arises from the purest spring. The only difficulty therefore is, to procure steam in sufficient quantity, and with that view we must have recourse to distillation. Various methods have been proposed, but the easiest and best is that employed by the late Dr. Irving, and for which he received a reward from parliament. For this purpose, the ship's kettle, or boiler, may be found sufficient, the lid or cover of which should be made tight by wet cloths or swabs. To the upper part of the lid must be fixed a tube slanting a little downwards, composed of a sheet of tinned iron or copper; or when these cannot be procured, a gun barrel, of a large bore, may be substituted. When the boiler is nearly filled with salt water for distillation, as soon as the steam arises, the tube must be constantly wet with a mop or swab dipped in cold water to condense the vapour, which will then be found to trickle down in drops into the vessel placed below to receive it. The distillation may be continued while the

provisions are cooking, which will save much fuel; but it ought not to be continued longer than till the water in the boiler be reduced to three-fourths of the original quantity: it must then be renewed.

The situation of men placed in the midst of an immense ocean, in a crazy shattered vessel, nearly full of water, and threatening every instant to sink, is truly deplorable; but the providential escapes of Capt. Inglefield from the *Centaur*, and Capt. Bligh from the *Bounty*, are such striking instances of what may be effected by resolution and exertion, that even in the most desperate circumstances, men ought not to lose their courage, nor give up life without a struggle. Whilst the boats remain unhurt, the instances above quoted, to which many more might be added, prove that the distressed crew may survive their sinking vessel, and safely reach some distant shore. Placed in their only remaining hope, a slender skiff, either unsupplied, or at most having a scanty stock of provisions, and little or no water, it may afford some consolation, some encouragement for perseverance to know, that men have survived three weeks without support, and have happily succeeded in gaining the shore. In such cases it has always been found, that the sensation of hunger greatly abates or entirely goes off in four or five days, and is succeeded by a violent insupportable thirst. The wonderful relief which such sufferers have experienced from being drenched to the skin in a shower of rain, has induced others to imitate this, by wetting their clothes in salt water; for it is universally known, that the skin can absorb, or suck in, substances applied to its surface; and hence immersion in water will remove thirst. It will therefore be found highly useful for the crew to dip their clothes twice a day in the sea, and put them on

wet;

wet ; this will not only relieve the thirst, but as described by those who have experienced its benefit, will add vigour to the body, without any risk of catching cold. Chewing any hard substance, as wood, &c. by promoting a discharge of saliva will tend to diminish the sensation of thirst. To abate the uneasy cravings of hunger, the example of some tribes of American Indians may be imitated, who when upon hunting expeditions, and obliged to pass many days without food, compress the stomach by means of flat boards laced round them, which they draw tighter every day.

When men are taken up at sea by a vessel, after having undergone the hardships abovementioned, the greatest care is requisite in affording relief to the unhappy sufferers. If they have been long exposed to cold, and the limbs be benumbed, the application of external heat must be carefully avoided : in cold climates, and when frost-bitten, the application of snow or iced-water is necessary ; but in a warm climate, moderate friction with the hands may suffice. Spirits, even in a diluted state, must be shunned as poison. At first the desire for food is lost, but the appetite soon becomes so voracious, that were it indulged, death would inevitably ensue. In proportion to the weakness of the body and the time they have been without food, must be the care employed in gradually supplying them with nourishment. The least nourishing foods must first be given in small quantity, and cold, such as water gruel, weak broths, &c. and repeated at intervals of two, three, or four hours. As soon as the strength returns the appetite may be a little more indulged, but extreme care is requisite for many days, and even weeks, lest *one full meal* should endanger life.

I shall

I shall next describe those disorders which most frequently occurred at Sierra Leone, and which occur in all similar climates.

FEVER is not only the most frequent, but the most important disease to which Europeans thus situated are liable; its course is more rapid, and without great care it sooner terminates fatally than the acute diseases of a colder climate, but when properly treated it may be rendered even less dangerous than a fever in Europe.

Fever may be divided into two kinds. 1. Remittent fever, or what is in general denominated simply, the Fever. 2. Intermittent fever, or Ague. These two diseases have a close affinity with each other, so that by improper treatment, the ague is easily changed into fever, and proves fatal: on the contrary, the fever sometimes terminates in an ague, and thus becomes less dangerous. Remittents and Intermittents may be distinguished from each other by the following circumstances: in the former, the symptoms have at times only a short and trifling alleviation, not always perceptible by the patient; in the latter, as soon as one fit is concluded, little uneasiness is felt for several hours, and the patient remains apparently well till the approach of another fit.

It seems proper to begin with the description of an AGUE, which is more regular in its appearances than the remittent fever.

An ague is divided into two parts; 1. The paroxysm or fit; 2. The intermission, or temporary cessation of all complaints. Again, the paroxysm may be divided into three parts or stages; 1. The cold fit. 2. The hot fit. 3. The sweating fit, which follow each other in regular order. When the sweating fit is over, the patient remains

mains free from complaint until the next cold fit begin; and this interval is called the intermission.

The manner in which an ague commences is various: sometimes the cold fit appears suddenly, when the patient thinks himself in perfect health; at other times a languor and weariness, with yawning, and stretching of the limbs, previously take place for a day or two. These symptoms are succeeded by a slight coldness at the ends of the fingers, which become shrunk and pale; a slight degree of coldness is also felt in the back and loins, and gradually spreads over all the body. The cold fit is often so violent as to make the patient's teeth chatter, and to shake his whole body. There is always some degree of thirst, and a clamminess in the mouth. A fixed pain is often felt in the head, chiefly over the eyes, but it is seldom severe during the cold fit. Sometimes the cold fit is so slight as scarcely to be perceptible, and continues only a few minutes; at other times, it may continue for an hour or longer. In the hot fit, which succeeds, slight flushings of heat are felt in different parts of the body, the face becomes red, the eyes bright and unable to bear the light; these symptoms are often perceived for some time by the by-standers before the patient will allow that the cold fit is over. Presently, however, the skin feels dry and burning, the thirst is increased, the eyes are more prominent, and sometimes appear as if blood-shot. The head-ache, which generally begins in the cold fit, becomes more severe, and is often attended with a troublesome beating noise in the head. The patient is much agitated, and restless, from a sensation of undescribable anxiety: he is also frequently affected with sickness at stomach, and violent vomiting. When these symptoms

have continued a few hours, generally about six or eight, they begin to abate; the harsh, dry and prickly state of the skin becomes less perceptible; a gentle moisture breaks out, first about the face, neck, and breast, and spreads from thence over the whole body. As the sweat continues to flow, all the distressing symptoms gradually disappear, and the patient at length seems restored to perfect health.

Although the usual progress of an ague be as above stated, yet variations from it occur in several cases. There is sometimes no regular cold fit: but the disease comes on with a pain more or less severe, affecting the whole head, or perhaps only one side of it, or the forehead over the eyes: there is sometimes only pain of the back or loins. The pain, whether in the head or back, continues a few hours, and is at length carried off by a sweat breaking out first on the affected part, and thence diffused over the whole body, without the intervention of a regular hot fit.

An intermitting fever, however modified, may, in general, be known by the return of its paroxysms or fits, at stated periods; and by the intervals in which the patient remains free from complaint.

Agues are of three kinds: 1. Quotidian (or every-day ague) 2. Tertian (or third-day ague) and 3. Quartan (or fourth-day ague). In the quotidian there is a fit once in twenty-four hours. In the tertian there is one every forty-eight hours; and in the quartan there is a fit once in seventy-two hours. The periods of an ague are, for the most part, so regular, that the fit commences on the days of its return, precisely at the same time: there is, however, occasionally some variation in this respect: the fit may

may come on one or more hours before the usual time : it is then termed an anticipating fit ; or it may come on one or more hours later at each return : this is called a postponing fit, which denotes a less violent disease. The whole duration of an ague fit seldom exceeds twelve or fourteen hours ; sometimes it is only six or eight hours. Agues do not often prove fatal ; yet, when improperly treated, as by hot spirituous medicines, given with a view of preventing the return of the cold fit, they are sometimes changed into fevers of a very dangerous kind. If they be neglected at first, or suffered to continue long without medical interference, the fits return, as it were, habitually ; so that when they are afterwards checked by proper remedies, and the disease seems to be at an end, the least fatigue or exposure to cold is sufficient to produce a relapse. Thus the patient is harrassed by frequent returns of the paroxysms, for a great length of time ; he becomes fallow and emaciated, his body and lower extremities are affected with dropical swellings ; and his existence is rendered truly miserable.

Much mischief has arisen in consequence of an opinion which is too generally entertained, that whenever a cold fit takes place, no danger is to be apprehended ; and the patient's friends are confirmed in this opinion, as they observe that after lying down a few hours while the fit is upon him, he has frequently a keen appetite as soon as it is over, and can return to his work as usual. The fits likewise, after several returns, seem to become milder ; and sometimes wholly cease for a few days, a week, or a month, and then return only for a short time : this deceives the patient, who thinks the disease is gradually going off, while, on the contrary, it grows more invete-

rate, and is undermining his constitution. It cannot be too often repeated, that we ought never to neglect, nor think slightly of an ague: by not attending to this maxim many Europeans on the coast of Africa have been irretrievably injured; for experience sufficiently proves, that the consequences of a neglected or mismanaged ague are, in tropical climates, more fatal, than even the effects of a continued fever.

CURE.—Notwithstanding what has been said above, it may be with confidence asserted, that no disease is more easily curable than an ague, when the proper treatment is early applied. If a fit has actually commenced, it must be left to finish its stages: nothing can be done farther than to render the symptoms more tolerable to the patient. He should go to bed and be well covered: if he is affected with sickness, and retching, this may be gently promoted by drinking a little tea, or warm water. Should the tongue be very white, and furred, with a bad taste in the mouth, and a sensation of weight and anxiety at the stomach, it will be of use to give a gentle emetic, which not only discharges the contents of the stomach, but likewise shortens the duration of the cold fit. When the stomach does not seem much affected, an emetic is unnecessary. At the beginning of the hot fit the pain of the head is generally the most distressing symptom: it may be relieved by 2 grains of opium made into a pill, or by 30 drops of laudanum taken in a little water, to which a tea-spoonful of sweet spirit of nitre may be added. This remedy often relieves the head-ache instantaneously, and produces a copious sweat. Where the sickness has not been considerable enough to render a vomit necessary, or where the stomach remains unsettled after the

the operation of the emetic, it is best to give only half the draught with laudanum at first, and the other half sometime afterwards, by which means, if the first dose be rejected, the second will more certainly stay on the stomach. When the sense of coldness is over, the patient may be kept as cool as he pleases: during the sweating fit also, he should be but lightly covered; he must, however, avoid exposure to any currents of air.

The thirst is generally very troublesome during the hot fit, to abate which he may drink tea, toast and water, lime juice and water a little sweetened; or he may take the juice of oranges, pines, the yellow plum, &c. But as the quantity of liquids taken often overloads the stomach without quenching thirst, it is better for the patient to palliate this distressing sensation by sucking at the mouth of a quart bottle filled with water, or any agreeable beverage, and covered with a double piece of thick cloth; a sufficient quantity of fluid may be thus transmitted to preserve a continual moisture in the mouth and throat, without injuring the stomach.

For the sweating fit no particular directions are requisite, as the patient is then tolerably easy; as soon as it is over he must be rubbed dry, and put on dry clothes. The fit being thus brought to a conclusion, the patient immediately feels so well that he imagines it will never return; but experience would soon convince him of his error; another, perhaps a much severer fit is preparing, which can only be prevented by a steady and plentiful use of the bark. An ounce of bark is the smallest quantity that will, with any certainty, produce this effect; a larger quantity, as an ounce and a half, ought therefore to be taken if the stomach can possibly bear it. The best

method is to have the requisite quantity mixed with water at one time ; and to take a wine-glass full every hour, or every two hours, according to the patient's ability. It must be remembered, if the disease be a quotidian, which has short intermissions, that less time is allowed for the remedy than in a tertian ; it must therefore be taken quicker. If three table-spoonfuls of bark be mixed with the quantity of water which would fill eight or nine wine glasses, one glass full may be taken every hour without much difficulty.

It sometimes happens that although the cold fit be prevented by the use of bark, a slight hot fit will nevertheless come on at the usual period : when this happens the bark may still be continued without any fear of increasing the fever. The same quantity of it ought to be taken every day, until at least two periods be completed ; after which there may be daily some diminution of it : for the more gradually this remedy is left off, the less danger there is of a relapse ; and even when the bark is finally discontinued, it will be of use to take a dose of bitters two or three times a day for a week longer. Care should also be taken to keep open the bowels, at least once every day ; for this purpose a calomel pill* may be taken ; or if the bark prove too binding, 8 or 10 grains of rhubarb may be added to each dose of it, till the requisite effect be produced. If the bark should purge, a draught with 30 drops of laudanum may be taken at once ; or 5 drops of laudanum may be added to each dose of the bark, till its purgative operation ceases.

CASE OF AGUE.—T. W. has been a considerable time upon the coast. On Monday about noon, whilst

* Containing 2 or 3 grains of calomel.

apparently

apparently in good health, he was seized with the cold fit of an ague, which continued severe for near an hour: in the succeeding hot fit, the head-ache became violent; and his eyes were much affected by the light. Two grains of opium taken at this time relieved the head-ache; but the skin remained hot and dry for about two hours; when, by degrees, a gentle moisture broke out, which at length terminated in a profuse sweat, and removed all the complaints. About eight o'clock, the sweating being over, he put on dry clothes, and felt easy and comfortable, though somewhat debilitated.

He is to begin in the morning to take a drachm of bark every two hours during the day.

TUESDAY.—He had already taken six drachms of the bark, when he was suddenly and unexpectedly seized with a violent cold fit at nine o'clock in the morning, i. e. three hours before the time of the first attack. The cold fit was attended with frequent vomitings, and great pain in the forehead. The sickness was relieved and the head-ache much abated by taking 2 grains of opium. The sweat did not break out till about three o'clock in the afternoon, and was not finished till after eight o'clock, when he felt much relieved but extremely weak. As the last had been an anticipating fit, he was ordered to begin the bark at midnight, and to continue it every hour till the expected return of the next fit, lying the whole time in bed.

WEDNESDAY NOON.—He had taken an ounce and a half of bark this morning before nine o'clock, and has not felt the smallest symptom of the fit: is still in bed. —To take half an ounce more bark to-day, and to get

up towards evening. Also to begin early in the morning to take bark, remaining in bed as before.

THURSDAY NOON.—Has taken above an ounce of bark to-day, and felt no return of the fit.

The bark being continued for a few days longer, and then gradually left off, there was no return of the ague.

The circumstances of an ague having been at large explained, the Fever of which I am next to treat, will be more easily understood. This is the most fatal disease affecting Europeans on the coast of Africa; though if taken early and properly treated, it is not more dangerous than the fevers of colder climates.

Fever is divided into the paroxysm, or fit, and the remission, or period in which the violence of the symptoms has some abatement. The paroxysm is subdivided, like that of an ague, into the cold, the hot, and the sweating fits; but these seldom follow each other with much regularity, unless it be immediately on the first attack of the disease. The cold fit is not very severe, and in many cases does not appear after the first time: the sweating fit is equally uncertain, neither does it always afford that relief which is experienced from it in an ague; on which account the period between the end of the sweating fit and the commencement of the next paroxysm is called, in fever, the time of *remission*, not, as in agues, an *intermission*.

The manner in which the fever comes on is different in different people; it frequently appears as a common cold, producing slight head-ache, chilliness, and wandering pains over the body; but is so slight that the patient scarcely thinks himself unwell. With these deceitful symptoms it continues three or four days, until the great weakness

weakness of the patient, or some sudden change in the disease, raises an alarm. It is thus, probably, that many persons are said to be carried off by fevers within forty-eight hours: whereas, had the time been reckoned from the first sensation of illness, it would have been six or seven days, or more.

The patient sometimes feels uneasy for a day or two before any febrile symptoms take place: there is a heat and heaviness of the eye-lids, so that he can scarcely keep them open; or a burning heat in the palms of the hands and soles of the feet; he feels the skin dry, rough and uncomfortable; complains of a loss of appetite and bad taste of the mouth; and has a sensation of anxiety, or universal oppression, not easy to be described. The previous sensations, however, are so numerous and varied, that almost every person who has had the disease, is conscious of its future attacks by a set of feelings peculiar to himself. There is sometimes a dark fallow complexion, with a heavy dull eye, and a want of activity, which continue for a day or two, and point out the approach of fever to a by-stander, though the patient makes no complaint himself.

The fever usually commences with shiverings, not very severe, and sometimes scarcely noticed by the patient. The shivering is succeeded by the symptoms which occur in the hot fit of an ague; but the restlessness and anxiety are in fever generally greater: the pain of the head also is more distressing, and seems often as if produced by a sharp instrument fixed over the eyes: at other times there is a sense of tightness over the forehead, as if the head were bound round with a cord. There is a burning heat in the skin, though to the patient it feels rather cool,
which

which is apt to mislead ; but if the hand at this time be applied over the forehead, the heat will be found very great. The patient tosses about, and seeks ease in every part of the bed : sometimes however he lies upon his back, inwardly moaning, without making any specific complaint. In this case, if the hand be applied over the stomach so as to press it gently, the uneasiness is in general increased. There is seldom much delirium, but the patient seems confused, and gives very quick answers to the questions put to him : if he fall into a sleep it is for the most part uneasy, and interrupted by frequent startings.

When these symptoms have continued with more or less severity for a few hours, a sweat breaks out, first about the neck and breast, sometimes, though seldom, spreading over the whole body : this sweat is more likely to be diffused over the body after the first fit than after any of the succeeding ones. The relief which follows it after the first fit is sometimes so great that the patient thinks himself well, though the head-ache does not go off so entirely as in the ague ; and his strength remains greatly depressed. This relief of the symptoms, or remission, lasts only six or eight hours, when another fit comes on, generally a much more severe one. The second paroxysm being seldom preceded by a cold stage, seems to consist only of a hot fit, more especially as the sweating stage, which should follow it, does not appear with any regularity at the second or third return of the paroxysm. In short, all the symptoms become more violent, and the remission less perceptible every succeeding fit. The fever goes on in this manner until the patient's strength is entirely exhausted : a fatal termination seldom happens

happens before the fifth or sixth day, but takes place generally about the eleventh or twelfth day, if the complaint has been neglected in the beginning.

Danger is to be apprehended 1st. When the head seems much affected, the patient lying on his back in a stupid state as if asleep, and being with difficulty roused.

2. When every thing he takes is rejected by vomiting.

3. When, apparently in a stupid state, he raises his hand often to his stomach, or complains much when it is pressed upon.

A frequent and distressing hiccup, involuntary discharges of urine, and stools : cold clammy sweats, with coldness of the hands and feet, shew that death is fast approaching.

We have reason to hope the disease will terminate favorably, when there is no particular restlessness or anxiety ; when the symptoms appear to abate, or at least do not increase in violence ; when the fever comes on at a later hour every day ; and when the patient enjoys, from time to time, a calm and refreshing sleep.

This disease should never be neglected at its commencement ; for often when it appears at first very slight, it yet terminates fatally : on the contrary, when its attack is violent and alarming, it may afterwards become a mild disease, free from danger. No flattering hopes should be excited by any sudden alleviation of the symptoms, such as that which often takes place after the first paroxysm of the fever. Many persons, through the want of experience, fall into a fatal error, being induced by what they consider as a favorable turn of the disease, to decline the further use of medicine, and thus lose the most critical period of the disease, which, if properly employed,

employed, would lead to a happy conclusion. A person who, for the first time, has had a fit of the fever as above described, and in consequence of the sweating feels so much relieved, as to suppose himself well; may by attending to the following symptoms be convinced that he will have a return of fever. 1. There still remains a slight degree of pain in his forehead, or a pain fixed over one or both eyes. 2. The skin feels rather clammy, and hotter than usual. 3. There is an astonishing degree of weakness; and, 4. The pulse is quicker than it ought to be. It will be useful for every one to acquire some knowledge of the quickness and force of the pulse, which may be done by comparing the pulse of a sick man with that of a man in health. The number of pulsations may be felt by applying the fingers on the inside of the wrist, and counting them by a stop watch, or with a quarter minute, or half minute sand glass, such as is used in heaving the log. The standard pulse of health is estimated at seventy-two beats in a minute; but as there are many variations from this amongst individuals, it is of consequence to ascertain the usual state of the pulse in persons committed to our care. The morning is the best time for the experiment; eating, drinking, exercise, passions, &c. quicken the pulse. In a fever the pulse may be from ninety to one hundred and twenty, or to one hundred and forty. In general we may say, when the pulse is increased, for a length of time, fifteen or twenty beats above the standard, it is a feverish pulse; when it abates fifteen or twenty beats, though it does come down to its usual number in health, we may conclude there is a remission; the pulse however must not alone be attend to in fevers.

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When a person is affected with the symptoms of fever already described, no time should be lost in beginning the cure. If he complains of sickness at stomach, and a bad taste in the mouth, his tongue being white and very clammy, a gentle vomit will be useful, consisting of a scruple of ipecacuanha, and one grain of tartar emetic. If there be a spontaneous vomiting, the emetic may be omitted; and it will be sufficient to drink a few cupfuls of warm water. When the stomach is thus cleared, if any degree of nausea remains, it may be checked by taking a very small quantity (two or three tea-spoonfuls) of brandy, mixed with as much warm water, and keeping very quiet; or by 15 drops of laudanum, and 20 drops of spirit of nitre taken mixed with a small quantity of water: if this should not be retained on the stomach, a similar draught may be taken again in half an hour: but if no sickness occurs, it may be deferred for an hour. When an emetic is not thought necessary, or when there is no sickness after it, the whole quantity of laudanum, i. e. 30 drops, may be taken at once, with a tea-spoonful of spirit of nitre and a little water. This medicine not only removes the nausea which succeeds the operation of an emetic, but moreover allays the violence of the symptoms, especially the head-ache, and restlessness, and very soon produces a copious and salutary perspiration. The emetic contributes to shorten the febrile paroxysm, and for the most part acts gently on the bowels: should it fail in this respect, a stool must be procured every twenty-four hours by other means.

The next and most important step is to give the bark; and upon a proper and steady use of this remedy must depend

depend all our hopes of success. For the sake of clearness let us first review the arrangement of the whole medicinal plan, supposing a person to be affected with a paroxysm of the fever about four o'clock in the afternoon. He immediately takes an emetic, the operation of which will continue about an hour and a half, or two hours: as his stomach is not then perhaps fully settled, he takes only half the opiate draught at six o'clock, and the remainder of it at half past six or seven o'clock. By these means the violence of the fit will be considerably diminished, and the sweating sooner produced.

If the patient has been very costive, and the emetic does not seem likely to promote any evacuation by the bowels, 6 or 8 grains of calomel made into a pill, or mixed with a little molasses, may be taken between nine and ten o'clock. Some nourishment will also be about the same time proper, as a little sago, wine and water, tea, or coffee. About twelve o'clock the patient may begin to feel himself strong and comfortable, in which case he must immediately have recourse to the bark, considering all that has hitherto been done merely as a preparation for it, and as of no avail in itself.

If the fever should have continued some days before any medical assistance has been applied, it is of the utmost consequence to administer the bark immediately, not premising even an emetic, which does not then prove so effectual as on the first attack of the disorder. When about to use the bark, we must recollect that in a large quantity only can material advantages be expected from it: in small doses it does not appear to have any effect. The state of the stomach in individuals must direct the
precise

precise quantity, some being able to retain a table spoonful at once, while others can scarcely bear a tea-spoonful. If only a small quantity is taken at once, it becomes necessary to repeat the dose more frequently. In general, two tea-spoonfuls of bark mixed in a wine glass of water, may be given every hour without inconvenience: if after having taken a few doses, the patient should be sick, somewhat longer intervals must be allowed. An ounce and a half, or 2 ounces of the bark * taken within six or eight hours, or before the return of another paroxysm, will be found to mitigate the violence of its symptoms; but is seldom effective enough wholly to prevent the fit, as in an ague. A return of the fever is marked by an increase of head-ach and thirst, a dry skin, and great restlessness. The bark, however, need not be discontinued when the above symptoms appear, unless they be attended with sickness and vomiting, in which case it must be omitted for a few hours; or until the stomach is settled again by the use of laudanum in the manner formerly directed. If there be no sickness and vomiting, the other symptoms will be relieved by 30 drops of laudanum taken in water, with a tea-spoonful of spirit of nitre: after which the bark may be continued every hour, or hour and a half. Should the skin still remain dry, the spirit of nitre may be repeated without the opiate in the course of an hour or two; at the same time flannels wrung very dry out of water, made as hot as the hand can bear it, may be applied under the bed clothes to the legs from the knees to the ancles. There ought to be two sets of these, so that when one set has been applied about a minute, it may be replaced by the other. After the

* As directed in page 36.

fomentation

fomentation has been continued for ten minutes, the legs should be rubbed dry, and wrapped up in a piece of flannel. In case of pain or uneasiness at stomach, the same application made to the pit of the stomach for about ten minutes, affords almost certain relief: it also removes the head-ache, and very often disposes the patient to sleep. When the head-ache and other symptoms are not so severe as to require the laudanum immediately, an opiate may be given at bed time, and will in general procure a good night's rest.

Although the violence of the paroxysms has abated by the use of bark and other remedies, the patient must expect to remain for some days in a very weak and languid state, with little appetite, with frequent hot fits during the day, and with more or less head-ache, especially when he attempts to sit up. These symptoms can only be removed gradually, by persisting in the use of strengthening medicines.

In some instances it happens that the head-ache is very violent, and continues distressing through the whole disease, being however aggravated during the time of the fit: when the laudanum and hot flannels fail in removing it, I have prescribed with advantage 5 grains of camphor dissolved in 30 or 40 drops of sweet spirit of nitre, with as much spirit of wine, and diffused in a table spoonful of water: this may be repeated, if necessary within two hours: it operates in general by producing a copious sweat without heating. A plantain leaf applied to the forehead, and renewed as often as it grows warm, often relieves slight head-aches by its agreeable coolness: the same good effects may be obtained by applying linen cloths dipped in cold vinegar and water to the forehead,

forehead, and renewing them frequently. A large blister applied to the nape of the neck is likewise useful on some occasions: but as the head-ache is only a symptom of the fever, and would cease, the fever being removed, it is therefore proper along with the above remedies to continue the bark regularly.

The patient often falls into a state of stupor, which might at first be mistaken for a sound sleep, but which is distinguishable by the difficulty there is in rousing him, and by his incoherent answers, when apparently awake. In such a case, great danger is to be apprehended: the head must be immediately shaved, and a blister applied over it; if this does not seem to be felt, a large blister may be applied from the ankle half way up the inside of the leg; and should this produce little effect, another may be applied upon the opposite leg.

As patients cannot always bear the bark in the requisite quantities, and often loathe it after some days' use, we ought to vary the manner of giving it. Some like to take it in wine, or brandy and water, and when this does not increase the head-ache it may be allowed; sometimes it is retained best on the stomach when mixed with plain water, a drop of oil of mint, a teaspoonful of spirit of lavender, or of Huxham's tincture of bark being added to each dose. In some cases, a pill with 2 grains of opium, or 30 drops of laudanum, within an hour after it has been given, will enable the stomach to bear the bark. The same end is sometimes accomplished by mixing 5, 10, or 15 drops of laudanum, with the first dose of bark, and repeating the same once or more, if the sickness or vomiting returns; care being however taken not to exceed 30 or 40 drops in twelve or fourteen hours. The stomach

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not unfrequently rejects the bark from being empty; the patient should therefore take between each of the medicines a spoonful or two of sago, or any other light food he chooses. A costive state of the bowels is likewise apt to make the bark disagree, and seems to lie very heavy upon the stomach. This may be obviated by a calomel pill at night; by mixing 20 or 30 grains of rhubarb with the quantity of bark to be taken in the course of the day; by 3 or 4 aloetic pills, or a table-spoonful of castor-oil. The pills or rhubarb being of small bulk, are less likely than salts, or purgative draughts, to produce sickness, or interfere with the use of bark. When the bark happens to purge, 5 drops of laudanum may be added to each dose of it; or 30 drops may be taken at bed-time. The patient's diet should consist of tea, coffee, sago, tapioca, boiled rice, &c. Sometimes he feels a desire for animal food, and may be gratified with a little boiled or roast fowl, mutton, or fish. London porter, lemonade, wine and water, or spruce beer, are the most proper drinks.

When the fever has ceased to return, and the patient can no longer bear the bark on his stomach, although given in smaller doses and less frequently than at first, it will be of the greatest advantage to take 20 grains of powder of columbo, or a cupful of bitters three times a day. When by these means the patient has recovered his former strength, he may have reason to expect a continuance of good health; but if he leaves off his medicines suddenly, and while in a state of great debility, he will be in constant danger of a relapse. During the continuance of the fever, the patient should use as little exercise as possible: if he be removed in the day-time

time from one bed to another, it should be done without any exertion on his side. Sitting up is frequently a cause of fainting, and ought not to be attempted.

The chamber of the sick must be kept cool and still. His hands, face, neck and breast should be washed every day, and his linen changed. He must be kept as quiet as possible, and prevented from talking, and from hearing others talk. A free circulation of air is always useful, but strong currents of it should be avoided.

With a view to render what has been said more easily understood, the two following cases of persons who had the fever at Sierra Leone are inserted.

A. B. aged thirty, of a fair complexion, and lately arrived on the coast, on Monday about noon was seized with a very severe pain of the head, sickness, and vomiting: his skin is now very hot and dry; his pulse beats very quick; his tongue is foul; he has a disagreeable taste in his mouth, and is very giddy on using the slightest motion.—To take a powder with one grain of tartar emetic, and 20 grains of ipecacuanha mixed together; and about an hour after its operation is finished, 30 drops of laudanum, with a teaspoonful of sweet spirit of nitre in a little water; afterwards to begin with the bark.

Tuesday morning, eight o'clock.—He took the emetic last night, which operated two or three times, and relieved him much; he also took the laudanum, and continued very easy till eleven o'clock at night, when he had a return of fever, in consequence of which he did not begin the bark as had been directed. The fever still continues: he complains this morning of a very severe pain in his head: his face is much flushed: he is sick,

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and occasionally vomits what he takes: his pulse beats one hundred and twenty times in a minute; his skin is hot; his tongue rather foul: he is very thirsty: has had no stool for two or three days.—To take immediately 8 grains of calomel, and two hours afterwards to begin with the bark, taking two large tea-spoonfuls every hour.

At six in the evening.—He seemed much easier; thought the pill afforded him relief, though it produced no evacuation; has had no sickness since it was taken: his pulse beats one hundred in a minute: he is less thirsty; and his head-ach is less severe. Since ten in the morning, near an ounce of bark has been taken and retained. He is to continue the bark during the night, and to take 2 grains of opium at bed-time.

Wednesday Morning, eight o'clock.—Had a tolerably easy night: his skin is cool and moist, his tongue is cleaner: he has less thirst, and feels no head-ach except when he endeavours to sit up: has had no stool, but is without pain in the stomach and bowels: he has taken an ounce of bark since last night.—To take 3 of the purging pills, and to continue the bark as before.

Eight o'clock in the evening.—This afternoon he had a return of fever, but with less severe head-ach: he was very thirsty, and his skin was rather hot: at present he is much easier.—To continue the bark, and not to take the opium at night unless he has a stool previously.—He has taken since morning near an ounce and a half of bark.

Thursday, nine o'clock, A.M.—The pills operated twice in the night: he rested well without the opium: his tongue is clean and moist: he has no head-ach, and feels

feels no complaint but from weakness: his skin is cool.
—To continue his bark as before.

Friday, eight, A. M.—Yesterday supposing himself recovered, he walked about till he was fatigued, and at the same time omitted his bark; whence he had a return of fever in the night. His head-ach is at present very severe: the face is flushed, and the eyes very bright: skin hot, pulse very quick, tongue brown and dry.—To put his feet in warm water for ten minutes, and to go to bed after they are well dried: then to take 20 drops of laudanum, and a tea-spoonful of spirit of nitre in a little water, and if not easier within four hours, 15 drops more of laudanum, and a tea-spoonful of spirit of nitre.

Eight in the evening.—He was relieved by the first draught; but notwithstanding took the second, which produced a copious sweat: his skin is cool and moist ~~in~~ present; his head-ach is almost gone, but he feels very giddy on raising himself from the pillow. Since noon has taken half an ounce of bark and retained it.—The bark to be continued as before.

Saturday, eight, A. M.—He slept well all night: skin cool; no head-ach: he complains of a slight sore throat; has taken one ounce of bark since yesterday at noon.—To gargle with vinegar and water, and to continue his medicines.

Sunday.—He has no complaint but weakness; can scarcely bear the bark.—To take only 6 drams to-day, and half an ounce to-morrow.

He continued the bark for a day or two longer, gradually diminishing the dose; after which he took a dose of bitters three times a day for about a week, and had no relapse.

Mr. G—, aged 26, florid, though of a brown complexion, lately arrived on the coast, was seized on Tuesday with a slight chilly fit, which soon went off, but was succeeded by severe pain in the head, back, and all the limbs. He now complains of great sickness at stomach, and thirst: his mouth is very clammy; the pain in his head is chiefly fixed over his eyes: and his forehead feels to him as if it were bound tight with a cord; his eyes appear ready to project from his head; his skin is dry and burning hot.—To take immediately a cupful of a solution of 3 grains of tartar emetic in a pint of water; and to repeat the same dose every ten minutes till he vomits. Afterwards to take 30 drops of laudanum, with a tea-spoonful of sweet spirit of nitre in water.

Wednesday Morning.—The vomit operated, though not until he had taken nearly the whole: it discharged from his stomach a very offensive mass, and considerably relieved the head-ach. An hour afterwards, he took the laudanum, which occasioned a copious sweat through the night. Within two hours after taking the draught, the pains of the head and limbs were almost intirely gone. He began then to take two large tea-spoonfuls of bark every hour in water, and has already taken an ounce. At present he is free from fever: his skin is cool and moist; he has no thirst; his tongue appears a little white, but it is moist; his urine is high coloured. He still feels a very trifling pain in his head, with slight giddiness on raising it. To continue the bark so as to take an ounce and a half before bed-time, when he is to have the laudanum draught.

Thursday Morning.—He has taken two ounces and a half of bark since Tuesday night; had an easy night
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and some sleep; feels scarcely any complaint this morning but weakness; he has no thirst or pain; his urine is of a lighter colour, and his appetite is returning.—To take the same quantity of bark to-day as yesterday; and the opiate draught at night.

Thursday Evening, eight o'clock.—Thinking himself almost well, he went on shore and staid near three hours: the day was cool, and he did not seem fatigued; yet, soon after his return on board, he was seized with a violent, though short cold fit, which was followed by great heat, and a severe pain in his head: his eyes were hot and watery, and unable to bear the light. He had his feet put into warm water for five minutes and then rubbed dry: when in bed he took 30 drops of laudanum, and a tea-spoonful of antimonial wine in water.

Friday Morning, eight o'clock.—He sweated profusely all night: his skin is rather cooler this morning, and moist; but his pulse is still quick; his head-ache is very severe; his face red and flushed; his eyes are bright; his tongue white and dry; he is very restless and anxious.—To begin immediately with the bark, and to take two large tea-spoonfuls every hour: for his thirst he is to take 30 drops of sweet spirit of nitre every hour or two, in a glass of water.

Six o'clock in the evening.—He continues much the same: the head-ach is still severe, and there is also a tightness over his forehead. His eyes are bright: his body has been kept sufficiently open. He has taken an ounce of bark since morning.—To continue the bark during the night, and to have his draught at bed-time with 30 drops of laudanum. The feet to be bathed in warm water.

Saturday Morning.—After taking the laudanum he felt easier, passed a tolerably good night, and sweated much. The head-ache and tightness over his forehead are almost gone: his face is less flushed; his eyes are not so bright: and he is less restless. His urine is still high coloured; his skin is cool and moist; and his thirst is much abated. He took yesterday an ounce and a half of bark. He is to take the same quantity to-day, to have the laudanum at night, and to put his feet into warm water.

Sunday Morning.—He passed a very easy night; complains of nothing to-day but great weakness and giddiness when he attempts to sit up. His skin is cool; his urine of a lighter colour, and his appetite is returning. He took an ounce and a half of bark yesterday.—To have the same quantity this day: to take an ounce on Monday, 6 drams on Tuesday, and thus to diminish it gradually.—The laudanum only to be used occasionally.

This gentleman recovered in a few days; but as he felt weak he was desired to take bitters for some time.

When persons recovering from fever leave off their medicines too soon, they are not only subject to a relapse from very slight causes, but are usually troubled for a long time with weakness, loss of appetite, and frequent slight head-aches, which become very severe on using any exercise: the skin is hot and dry, especially towards evening and during the night: a great heat is felt inwardly: there is likewise a very disagreeable sense of burning in the palms of the hands and soles of the feet. Sometimes there are slight shiverings and chills down the back, succeeded by heat, or by partial sweats on the breast,

breast, back, &c. the knees tremble, and seem scarce able to bear the weight of the body. By taking bitters, or a dose of the colombo powder, as already recommended, three or four times a day, for a week or two, these symptoms will disappear: but if neglected, they may continue to trouble the patient for several months.

That dreadful scourge of Europeans, the **YELLOW FEVER**, appears to be almost confined to the West India Islands; and as it occurs chiefly in situations on shore where medical advice can be procured, it will only be necessary here to point out the chief symptoms which distinguish it from the common remittent fever, in order that the patient may not be lulled into security, but call in assistance as expeditiously as possible.

The Yellow Fever mostly affects persons just arrived from Europe, or from the northern parts of America; particularly those of a robust, full habit of body, who appear in the highest health. It is most prevalent during the hottest months of the year, and is often a consequence of too violent or too long continued exercise in the sun. It is more frequent on the sea-coast, and in a heated dry sandy soil, than in the interior parts of the country: and in mountainous situations it rarely occurs. The remittent fever on the contrary, appears chiefly in low swampy situations, in uncultivated places, and stagnant air; and it chiefly attacks such as have resided some time in the West Indies, especially when weakened by previous illness, or of a delicate, relaxed habit of body. The yellow fever attacks very unexpectedly, and with very great violence, while the patient thinks himself in the most vigorous state of health. There is a violent

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pain

pain in the head, loins, and thighs, much greater than what is ever complained of in the remittent fever. The face is uncommonly flushed; the eyes are unable to bear the light; the patient appears confused, articulates indistinctly, and has in other respects the appearance of being intoxicated. The stomach is generally affected with vomiting, and with a sensation of burning pain. There is great restlessness, and an indescribable degree of anxiety. The strength is so exceedingly depressed, that the patient often faints on attempting to rise from bed. During the early part of the disease, his bowels are obstinately costive. Sometimes within twelve, or twenty-four hours, or even later from the first attack, the violence of the above symptoms abates so considerably that he imagines himself almost well, the stomach being settled enough to retain nourishment, and the head quite composed. This however is but a deceitful calm. In a few hours other symptoms appear, which portend great danger: a slight degree of yellowness is observed in the white of the eye, which spreads over the face, neck, and shoulders, until the whole body acquires more or less of an orange tint; and this it is which gives the name to the disease. The yellow tinge of the skin sometimes appears within a few hours from the first attack, but frequently not until the second or third day: it is not peculiar to the yellow fever, but sometimes occurs in the remittent, where it is much less dangerous. The stomach is again disordered, and vomiting succeeds. The discharge is at first, small in quantity, but gradually increases, until it becomes enormous, and greatly exceeds the quantity of fluids taken in. The matter vomited up differs from what is brought up in remittent fever, in not
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being bilious: at first it is a clear fluid, but when the disease has continued for some time, it deposits a brownish sediment, which gradually turns darker, until it becomes almost black, or like the grounds of coffee; hence the denomination of "black vomit." The stools become very frequent towards the end of the disease, and resemble the discharge from the stomach. The urine acquires the same dark colour. Blood is frequently discharged from the nose, mouth, and other parts of the body. All these symptoms rapidly increase in violence; the anxiety and restlessness become so great as to require force to keep the patient in bed. Convulsions come on, in one of which the patient generally expires.

These symptoms may suffice to point out this fatal disease, and warn the patient or his friends of impending danger. In the absence of medical assistance, which ought to be procured as early as possible, it may be advisable to evacuate the bowels; for which purpose 8 grains of calomel and as much jalap, are to be given in a powder mixed with molasses, or formed into pills, and repeated every two hours until stools be procured. A clyster composed of two ounces of salts dissolved in a pint of warm water, may be administered and repeated in the intervals of taking the pills. Flannels dipped in hot water and wrung very dry, may be applied to the belly for fifteen or twenty minutes, and when the skin is well dried, a large blister may be applied. When the pills and purging clysters have operated sufficiently, if the head be still much pained, a large blister may be applied over the whole, or to the back part. The calomel may be given in smaller doses, viz. two grains, every three or four hours, and if it prove purgative, one or two grains of

opium may be added, with 10 grains of kino, which last may be repeated occasionally. When the gums feel tender, an effect not often produced, the calomel may be left off. The mode of using it is noticed under the articles Rheumatism and Venereal Disease. The diet in this disease may be the same as for the remittent fever; and, when the feverish symptoms have abated, an infusion of bark, or bitters, or the powder of colombo, may be administered. It will be found very useful to wash the patient's body with vinegar, or with lime juice, and to repeat it frequently. Bark, wine, and opium, must be carefully avoided, and the diet should consist of sago, tapioca, rice, gruel, &c. To diminish the extreme restlessness, the patient may be laid in a hammock, and swung as long as it is agreeable to him. The hammock should be shallow, in order to avoid heating the patient. Persons going to the West Indies ought to choose the coolest time of the year to arrive there, which is from December to April. They ought, if possible, to occupy a healthy situation in the mountains, where they will become inured to the climate with very little risk. They should avoid fatigue, particularly in a hot sun: in other respects they may attend to the general directions given in the beginning of this Treatise. New comers, who are remarkably robust, besides attending to the rules above-mentioned, ought to use calomel as a purgative, occasionally; or if they be much affected with head-ach, a little blood might be taken away. But the best general plan for every one, and that which will supersede the necessity of blood-letting is, to begin upon an alterative course of mercury, and continue it for two or three weeks, or a month, so as to keep up a slight degree of soreness of the mouth.

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The DYSENTERY, or FLUX, is not so frequent a disease about Sierra Leone, and on the Windward Coast, as it is on the Gold Coast, and lower down. It arises in many instances from infection, and spreads rapidly, proving very often fatal. This complaint, in general, begins like the fever, with cold shiverings &c. sometimes with sickness and vomiting. There is always a great pain in the belly, especially about the navel; the stools are more frequent than usual, but scanty, and have a peculiarly fetid smell. They soon lose their natural appearance, becoming frothy, slimy, and mixed with blood. As the disease advances, the pains in the bowels are much aggravated: there is a constant desire to go to stool, and a violent straining, though nothing more is evacuated than a little slime, or blood. With the stools are often mixed hard lumps or knots: and when the case has become inveterate, substances resembling pieces of skin are discharged with the excrement. When the stools chiefly consist of slime, this disease has been called the white flux; when they are mixed with blood it is called the bloody flux.

The dysentery arises from exposure to cold after strong exercise, or to the night air and dews in an unhealthy country. It is often produced by bad water, bad diet, unripe sour fruits, or by going to a necessary used by persons labouring under the disease: it is also a frequent consequence of fever.

In the treatment of dysentery, our endeavours must be applied to procure a discharge of the morbid contents of the bowels, by suitable purgatives: for this purpose an ounce of Epsom salt may be dissolved in about a pint of hot water, as much lime or lemon juice and sugar being

added, as will make it a pleasant beverage. Some persons choose to make the further addition of a table-spoonful of brandy, rum, or Teneriffe wine. Of this purging potion the patient should take a small tea-cupful every hour till a stool is produced. After the operation of the salts the stools will be larger, and of a more natural appearance: and little hard lumps will be passed, by which the tenesmus, or straining to go to stool, will for a time be relieved. If the above-mentioned quantity of salts fail in procuring a proper evacuation, the beverage may be repeated in about half the former quantity. When a stool has been produced, the patient may take at bed-time a grain of opium, and 3 grains of calomel, which may be repeated in four or six hours if the griping be severe. Fomentations repeatedly applied to the belly likewise afford a great relief in the griping. On the following morning, the purging beverage should again be taken in the same manner, and the pill with the fomentations may be repeated at night. If the stools continue small, and the tenesmus be severe, the purging beverage should be employed for three or four successive days. In some cases a grain of emetic tartar may be added to it, which will render its operation quicker and more effectual. Castor oil agrees better with some persons than the salt; it is taken in doses of one or two table-spoonfuls every hour till it operates. Notwithstanding the apparently great weakness of the patient, and the number of irritating motions, it will be found that his strength will increase in proportion as the stools become freer and larger by the use of evacuant medicines. The griping produced by salts or castor oil, is not only much less severe than that from the disease, but it is of a different kind

kind and differently seated. When the pain continues violent, notwithstanding the use of fomentations, &c. a blister may be applied over the part where the pain is most severe.

The fever is sometimes joined to the flux, and increases its danger. The presence of fever will easily be discovered by the returns of paroxysms, in which the patient is worse at one time of the day than another. In this case, stools being first procured, Peruvian bark must be given according to the plan formerly directed. Should the bark prove purgative, or otherwise disagree, it may be changed for the Angustura bark.

In fluxes of long standing, where there is but little tenesmus, and the patient is weakened by the continuance of the discharge, a grain and a half, or two grains of opium, with two grains of calomel, may be taken every night at bed-time, until a brassy taste is perceived in the mouth, when it should be discontinued. At the same time the patient may take a tea-spoonful of Angustura bark four or five times a day: this will not only restrain the violence of the discharge, but it will also brace the stomach and bowels, and finally restore the patient to his former strength.

When the tenesmus, or constant uneasy inclination to go to stool is abated, if the discharge frequently continues as in a common looseness, with a sensation of rawness internally, an ounce, or an ounce and a half of gum arabic, may be dissolved in a quart of rice or common water, and drank in the course of the day. The Angustura bark is the best medicine at this time, if care be taken to prevent its binding too much, by the occasional use of a gentle purgative. The diet may consist of boiled rice, sago, or
tapioca,

tapioca, with wine, or a little brandy and sugar, tea, boiled flour, broth, &c. The patient may also take the juice, not the pulp of ripe fruits, as oranges, pine-apples, &c. but if it seems to ferment, and occasions an unpleasant distension of the stomach, it must not be persisted in. It may be observed in general, that the use of fruits is more allowable at the beginning of the disease, than when it has continued for a length of time.

The dysentery or flux being infectious, in order to prevent its spreading, the greatest attention must be paid to cleanliness and ventilation. The place where the sick persons sleep should be kept cool and airy: the excrements, &c. should be removed as soon as possible: and none of the patients should be permitted to go to the necessary used by those who are in health.

Cases of Flux.—T. S. æt. 40.—Sunday. For four days past has been affected with very severe griping and purging. His stools consist chiefly of blood and slime; they are very numerous and small in quantity. He is harassed with a constant, uneasy desire to go to stool, and with much ineffectual straining or pressing. His skin is hot, his tongue white: he is very thirsty: has no appetite, and feels much debilitated. He took yesterday 20 grains of ipecacuanha, and 2 grains of tartar emetic, which did not make him vomit. At bed-time he took a grain of opium, with two of calomel, and repeated the dose four hours after; but had notwithstanding a very restless night.—To take by cupfuls an ounce of salts dissolved in a pint of water, 1 grain of emetic tartar being added. To have at bed-time a grain of opium, and 2 of calomel as before, and to repeat the same in
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four hours if the pain required it : also to have the belly fomented.

Monday Morning.—The salts operated very gently, producing several stools, chiefly composed of slime and blood, but intermixed with a number of hard knots and lumps. He felt much easier during the operation. Towards evening the griping and straining at stool returned very severely, but were somewhat relieved by the pill, and by the fomentations. He was however obliged to take the second pill, which procured a short respite from pain. At present the griping, purging, and desire to go to stool are very severe. He feels weak, and has much thirst. To repeat the salts as before, and the pills at bed-time, with the fomentations.

Tuesday Morning.—The salts operated very well; and many hard lumps were evacuated; the griping and forcing returned towards evening, but were relieved by the pills and fomentations, which procured him a comfortable night.

Wednesday.—The stools procured by the salts yesterday had less blood in them than usual; they were also larger, and of a more natural appearance: the pressing at stool is now nearly gone: his thirst is abated, and he feels more comfortable. To omit the salts to-day, and only to take the pills at night.

Thursday.—His stools appear natural, and are unattended with griping; his appetite is returning. To take a dose of bitters three times a day; and if he becomes costive, or feels the least return of the pressing, to repeat the salts.

Mr. W. aged 30.—Tuesday.—He has been affected with

with severe twisting pain in his bowels for two days past, during which time he has not had a natural stool; but has very frequently voided small quantities of frothy, bloody slime. He has also a constant uneasy desire to go to stool, with much pressing and straining; he is very thirsty, and his skin is hot.—To take in the evening 20 grains of ipecacuanha, and 2 grains of tartar emetic; and at bed-time a pill containing 1 grain of opium, and 2 grains of calomel; which may be repeated.

Wednesday Morning.—He vomited only once last night: he fell afterwards into a sweat, which was checked by his being exposed to the cold air. The griping is very severe this morning, and much blood and slime has been discharged: the pressing and straining at stool is also very distressing. To take immediately an ounce of Epsom salts dissolved in a pint of water; at bed-time to repeat the pills, and to foment if the pain be severe.

Thursday Morning.—The salts operated very well, and discharged many lumps or knots: in consequence of which the griping was much abated. He was greatly relieved by the fomentations, and had a little respite during the night: as the straining and pressing at stool still continues, and blood and slime are still voided, he is to take the salts again as before, and to have the pills at bed-time, with the fomentations.

Friday Morning.—Feels much stronger this morning; had a natural stool yesterday from the salts; he had no stool in the night, but had one this morning with little blood, and had no griping or straining; he is to leave off the salts to-day, but to take the pills at night without the calomel.

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He continued to recover, and took no more medicine until a week afterwards, when the salts were repeated.

DIARRHOEA, or Looseness, is a disease which occurs frequently. It arises from bad water, bad diet, unripe sour fruits, or from eating something offensive to the stomach. In persons of a delicate and irritable constitution, any sudden exposure to cold, after being warm, checks the perspiration, and immediately produces a disorder of the bowels. This complaint when attended to early, may be cured without much difficulty; but if it be neglected, the great evacuations may exhaust the patient's strength, bring on a dropsy, and prove fatal. When it arises from something which disagrees with the stomach, the cure must be accomplished by an expulsion of the offending substance. For this purpose 20 grains of ipecacuanha may be taken in the evening, 30 drops of laudanum, with a tea-spoonful of spirit of nitre at bedtime, and in the morning 30 grains of rhubarb, with a little spirit; or a table spoonful of castor oil. In slighter cases the rhubarb, with or without the laudanum at night, may be sufficient: but when the looseness has continued for some time, and seems likely to prove obstinate, it is proper to begin with an emetic, and give the rhubarb afterwards. The ipecacuanha must be given alone in this complaint; as emetic tartar would rather tend to increase it. When it has originated from sudden exposure to cold, 30 drops of laudanum, with a tea-spoonful of spirit of nitre, or a little antimonial wine, may be mixed with a glass of warm wine, or brandy and water, and taken on going to bed. Another draught of the same kind, but without the laudanum, may be taken

in the course of the night, if a sweat should not be produced by the former one.

When the bowels continue weak and irritable after the use of the above medicines, a tea-spoonful of *Angustura* bark taken three or four times a day in water, seldom fails to give relief. The gum arabic is likewise useful, being added to the patient's usual drink.

There is a disease intitled *CHOLERA MORBUS*, which has, on its first appearance, been mistaken for a diarrhœa, or the flux : as it often proves suddenly fatal, the nicest care and discrimination are necessary at its commencement.

The person affected with it is seized on a sudden with violent purging and vomiting, by which a large quantity of a greenish or yellowish coloured fluid is discharged. There is an excessive thirst, yet every thing that is drank is immediately thrown up again. A burning pain and inexpressible anxiety are felt about the pit of the stomach, where the least pressure cannot be borne. The patient is restless and agitated, constantly moving from one part of the bed to another. His skin is very hot and dry ; but his hands and feet are in general cold. Cramps are felt in various parts of the body, chiefly in the thighs and legs. The stools are so numerous and so large, that his strength is spent in a few hours. Cold sweats and fainting then come on, and are succeeded by a troublesome and painful hiccup ; and lastly by convulsions, in which the patient sometimes expires after an illness of twenty-four hours.

This disease is almost always produced by sudden changes from heat to cold : thus it takes place in those
who

who after exposure to a hot sun, remain long in a current of cold air ; likewise in persons exposed to the night air, and dews, thinly clad, after fatiguing exercise, or labour in the woods on a hot day.

The Cholera is distinguishable from a common purging, or from the flux, by the violence of all the symptoms, by the very large evacuations upwards and downwards ; by the extreme weakness which suddenly comes on ; and by the cramps of the limbs.

The principal aim in the treatment of this disorder, is to check the profuse evacuations, and to excite a perspiration. For this purpose flannels wrung out of hot water are to be applied over the stomach and belly * for ten or fifteen minutes : after which 5 drops of laudanum, and 20 of spirit of nitre, may be given every hour till the vomiting and purging abate. At the very beginning of the disease, a few cups full of warm broth, warm water, or water gruel, serve to render the vomiting more easy, and to clear the stomach before the laudanum and other remedies are applied. If the draught should be immediately thrown up, a similar one may be given in half an hour ; if this should not be retained, an interval of an hour must be left before another is administered : in the mean time the hot flannels may be applied first to the stomach, and then for an equal time to the legs, care being taken to dry them well afterwards. As soon as a sweat is produced by these means, the vomiting generally ceases, and the opium becomes no longer necessary. If the purging still continues, the patient's strength must be supported by sago, soup, and a little warm wine and water
made

* In the manner described page 45.

made agreeable with acid and sugar: but only a small quantity should be given at once, through fear of renewing the sickness. The sweat may be kept up by giving 30 or 40 drops of spirit of nitre every two hours. If the purging should stop suddenly, and any uneasiness be felt in the bowels, a few grains of calomel, or some other gentle aperient medicine will be necessary. As the strength is so much reduced by this complaint, it will be proper for the patient to take 20 grains of the colombo two or three times a day, for some time after the complaint has ceased.

Case of the Cholera Morbus.—M. J. aged 22. Tuesday Morning.—After having yesterday been much exposed to a hot sun, he stood some time in a cold wind; and was, in consequence, seized at night with a discharge upwards and downwards of much green and yellow matter. This was attended with a sense of inward burning, and a great pain at the pit of the stomach, when touched with the hand. There was also great anxiety and restlessness, with severe and painful cramps of the legs and thighs. The above symptoms continued through the whole night: the vomiting and purging are yet very severe, and have produced great weakness: the pulse is very quick: the hands and feet are becoming cold. Fomentations are to be applied to the stomach for ten minutes, and repeated every half-hour: 5 drops of laudanum, and 20 of the spirit of nitre, are to be taken immediately afterwards, and also to be repeated in half an hour.

Six o'clock in the evening.—Has not vomited since the first dose of the laudanum. He felt relief from the pain

pain after the second dose, and after the fomentation. The latter was therefore repeated every half hour; but the laudanum and spirit of nitre were not given again till two hours had elapsed. There is still a slight pain and foreness over the stomach when pressed. He feels extremely weak and languid. Having now taken 30 drops of laudanum, he was desired to discontinue it, and only to use the fomentations every two or three hours.

Wednesday.—The vomiting and purging returned, in the course of the night, with much pain, not of the stomach, but in the bowels, chiefly round the navel. The pain was relieved by 10 drops of laudanum, and by fomentations to the belly repeated every half hour. As the vomiting still continued, 10 drops of laudanum were given two hours after the first draught, by means of which, and the fomentations, he fell into an easy and refreshing sleep. He is this morning free from pain, but very weak and languid; has had two loose stools since the last dose of laudanum.

This patient had no return of the disorder; and he recovered without the further use of medicine, being averse to bitters, or other strengthening remedies.

DROPSICAL SWELLINGS of the legs and thighs very frequently appear after patients have been much debilitated by the fever, ague, or flux: they are sometimes produced by poor living and hard labour; and usually attend large ulcers of the legs. As the complaint always arises from weakness, our chief view must be to evacuate the water which causes the swelling, and afterwards to prevent its return by strengthening the patient's constitution. In this disease a dent or impression
may

may always be made on the leg or foot when pressed by the fingers. The swelling is very much diminished in the morning after a good night's rest, and appears again towards night, after walking or hanging the legs down. It is generally most visible about the ancles, but sometimes extends to the thighs and belly.

The swelling may be reduced by promoting the secretion of urine, which is very scanty in this complaint. Cream of tartar is one of the best remedies for that purpose: a tea-spoonful of it may be taken in most cases three or four times a day, mixed with a little molasses or honey; but as it is a purgative medicine, the dose must be regulated so as not to produce more than two stools in the day. A cupful of the bitters should be taken after each dose of the salt. The legs should be laid up during the day time, and rubbed gently with the hand. Swellings of this kind are usually removed in the course of a week: it will however be proper to continue the use of the bitters for some time longer.

When the swelling has subsided during the night, a tight stocking put on in the morning, or a flannel bandage about three fingers breadth, and seven or eight yards long, rolled round the leg as high as the knee, beginning at the foot, often prevents its return in the course of the day.

Persons who have been long affected with fever, or more especially with an ague, are very liable to have a swelling and hardness of the belly, with or without a swelling of the thighs and legs. It sometimes happens, while the body is thus swelled, that the limbs are shrunk and emaciated. The swelling is generally caused by an enlargement of the spleen or milt, called in
England

England the **AGUE CAKE** : it may be felt on the left side projecting from under the ribs, and sometimes appears to fill up a great part of the cavity formed by them. Along with this complaint there is often water in the belly, the fluctuation of which may be perceived by laying one hand upon the side of the belly, and giving a gentle tap on the other ; the fluid being felt to strike the fingers on the opposite side, in the same manner as water would do in a bladder nearly full. In this species of dropsy, a trial may be made of the medicines above recommended for swellings of the legs and thighs, though with less hope of success. When the enlargement of the spleen constitutes the whole disease, no water being contained in the belly, very little indeed can be done to remove the swelling ; the patient however may be comforted with the assurance, that, if care be taken, he will not become worse, but probably enjoy many years of good health. Mercury has sometimes been given in such cases ; it has always, however, injured the health of the patient, without having any effect whatever upon the swelling. The best plan of treatment is to restore health and vigour, by giving a tea spoonful of bark three or four times a day, or a cupful of the bitter infusion ; and twice a week, if the state of the bowels permit, a table spoonful of the purging salt. Should the person affected be in tolerable health, it will be most adviseable to leave to nature a complaint which often gradually diminishes without the aid of medicine.

TETANUS, or LOCKED JAW, is a disease very frequent in hot climates ; it has not however been observed at
Sierra

Sierra Leone, and it appears to be scarcely known upon the coast of Africa. It always occurs during the hottest seasons. Although the disease receive its name from the lower jaw being closely shut or locked by a strong contraction of the muscles, yet this is not the only symptom of consequence. The muscles of the head and neck becoming stiff and hard, prevent the patient from bending his neck; and the head is often forcibly retracted. There is a severe pain at the stomach, shooting through to the back: the muscles of the back become so rigid and contracted that the patient can neither raise himself nor stand upright; and the body is frequently bent backwards into the form of an arch. When the disease is more advanced, the muscles of the legs, arms, and almost every part of the body, are affected in like manner. The contractions sometimes relax for a few minutes, and then return with increased violence: the least motion or noise, or an attempt to swallow any thing, will occasionally bring them on. The patient, though suffering under exquisite torture, generally retains his senses until convulsions take place, and put a period to his sufferings. This disease is occasioned by wounds, sometimes of so slight a kind as not to be noticed, but especially by punctured wounds; also by bruises, and other external injuries. It is frequently brought on by excessive labour, or any kind of fatigue; by exposure to cold after having been greatly heated; by sitting in wet clothes; and particularly by sleeping in the open air at night after a very hot day. The jaws are not affected until several days after the above-mentioned causes have been applied: when therefore slight convulsive twitches are felt in them, or in the temples, with some difficulty of swallowing, and a degree of stiffness in the muscles

of the head and neck, there is reason to apprehend this disease. When locked jaw is brought on in consequence of a wound, this latter is generally found free from pain, swelling or inflammation. To produce in it a salutary degree of pain and inflammation, it is recommended to fill the wound with lint, dipped in oil of turpentine; and if the wound be small, as when from a puncture, it ought to be enlarged, and treated in the same manner. The most powerful means are to be used to strengthen the system; the patient must take a dram of bark in port, sherry, Teneriffe or Madeira wine, every hour; or when the stomach cannot bear such a quantity, every two hours. To diminish the violence of the pain, two or three grains of opium may be given and repeated every two hours, with the bark and wine. This quantity of opium is very small when compared with the doses which have been sometimes used in this disease; but it will not be prudent to exceed the quantity of a scruple or half a dram in twenty-four hours, unless with the approbation of a medical man. During the exhibition of wine, bark and opium, it has frequently been found of great use to dash a few buckets of cold water over the patient's naked body, which must be extremely well dried afterwards; the cold water may be repeated every two or three hours, if it appear to be attended with beneficial effects, such as a diminution of the violence of the spasms, and rather an increased degree of heat over the whole body. But if after having repeated it once or twice, the extremities feel cold, or a cold sweat break out, this practice must be laid aside, as it is of great consequence to preserve an uniform heat on the surface of the body. When the heat of the skin appears less than natural, it must be

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increased

creased by rubbing it with warm flannels, and by the application of hot water in bottles, hot salt, or heated bricks to the feet. This disease is more dangerous when produced by a wound than by cold, and will require the means above-mentioned to be more steadily pursued, and to be more early put in practice. When the disease does not prove fatal in the first week, there are very great hopes of the patient's recovery.

A STROKE OF THE SUN, *COUP DE SOLEIL*, as it is called, scarcely ever occurs at Sierra Leone; but after long exposure to a hot sun, a very particular fulness is felt in the head, as if it were ready to burst: there is at the same time a disagreeable beating in the temples, and a shortness of breathing, or panting. These symptoms are not dangerous, but in general cease on resting in the shade, or washing the face, or dipping the hands in cold water. If there be frequent returns of the beating and fulness of the head, a gentle dose of salts taken once or twice a week is an useful palliative.

When, however, in consequence of a long and fatiguing march in the sun-shine, or after sleeping in the open air, with the head uncovered, out of the shade, a person falls down insensible, as in a fit of apoplexy, means of relief must instantly be applied, or life will soon be extinguished. The patient should be carried to a cool shady place, his head and breast must be raised from the ground, and a current of air be produced by fanning him. Plenty of cold water must be dashed over his body, which may be rendered still cooler by adding to it vinegar, or dissolving in it some common salt. If in a convenient situation, the body may be placed

placed up to the breast in warm water, while at the same time cloths dipped in very cold water are applied to the head and neck, and repeated before they have acquired any warmth. A clyster may also be given, composed of a quart of cold water, in which, if the patient be costive, two ounces of Epsom salt may be dissolved just before it is administered. Common salt, nitre, &c. render water cooler only during the time they are dissolving. A considerable degree of cold is also produced by evaporation: thus, a bottle of any kind of liquor, wrapped in a cloth, frequently wetted, and exposed to a strong wind, or even to a hot sun, becomes cool while the water flies off or evaporates.

HEPATITIS, or INFLAMMATION OF THE LIVER, is a disease very frequent in the East and West Indies, especially in the former. It usually commences with some degree of coldness and shivering, to which succeeds a considerable heat over the whole body. An acute pain is felt at the pit of the stomach, or on one side, generally the right side, immediately under the edge of the ribs: this pain is greatly aggravated when the patient coughs, sneezes, or makes a deep inspiration; it is also increased by pressing upon the part, or lying upon the opposite side. The skin is, for the most part, dry and burning; the pulse is very quick; there is a great thirst, frequently vomiting, and extreme restlessness. A pain more or less acute shoots up towards the collar bone or shoulder of the affected side. The patient complains of a degree of numbness in the arm, most frequently in the right. When the above symptoms occur, the disease has generally come on suddenly and without previous

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sickness;

sickness; but it sometimes is so slow in its progress, and the symptoms are so slight, that the patient scarcely supposes himself unwell. In this case there is a sense of weight and fulness about the pit of the stomach and under the ribs: the pain shooting from the side to the shoulder is of a dull heavy kind, neither increased by respiration nor coughing, and scarcely affected by pressure. The complexion changes to a dirty fallow hue, or to an high orange colour, as in jaundice, circumstances which often indeed give the first alarm. The urine is highly coloured, the stools are white like clay, and the body is generally costive.

This disease is occasioned by a variety of causes; by external violence from falls, bruises, wounds, &c. by long exposure to a very hot sun, by hastily cooling the body after it has been greatly heated, by the abuse of spirituous liquors, and not unfrequently by allowing agues to run their course, instead of putting a stop to them by a proper use of the Peruvian bark.

This complaint may be expected to terminate favorably when the fever abates and the pain gradually becomes less; when the urine lets fall a sediment, and when the bowels, from being costive, become loose, and the patient feels relieved by the evacuations. There is reason to fear that the disease will terminate in suppuration, or in the formation of matter, which bursting inwardly may carry the patient off suddenly, or bursting outwardly may cause him to waste away as in a consumption, when, notwithstanding the means employed, the fever and pain still continue violent; when a sensation of weight is felt, and especially when the patient feels frequent chilly fits or shiverings. When the pain suddenly ceases

ceases, the pulse becoming quick and small, the strength failing, and the extremities being cold, while the patient's face is covered with a cold sweat, and his features seem altered, mortification has taken place, and death is fast approaching. When the disease has been slower in its progress, and not attended with much pain, if left to itself, it commonly renders the liver scirrhus or hard, sometimes enlarging it very much, at other times diminishing it in size: in either way it renders the liver incapable of performing its office, and lays the foundation for dropsy and other fatal diseases. When the pain is so severe as to render breathing difficult, it becomes necessary to take away a little blood: the quantity to be taken can only be determined by the severity of the pain and the age and strength of the patient; but it will perhaps not be proper to exceed eight ounces, or about half a pint. A blister, larger than the hand, must be applied over the pained part, and if the pain be not removed by the first, another blister may be applied as soon as the part is healed. When there is sickness at stomach and vomiting, together with costiveness, a dram of magnesia, mixed in a cup of water, may be swallowed, taking immediately after it another cup of water, made sour with vitriolic acid, as directed page 20, on sea sickness. If the bowels be loose, the salt of tartar and lemon juice may be used instead of the magnesia. If this plan does not succeed in opening the bowels, a dose of Epsom salts, castor oil, &c. may be taken and repeated until the full effect be produced. At the same time it will be proper to commence the mercurial plan: 2 grains of calomel, and a grain of opium, made into a pill, may be given night and morning, or the calomel may be formed

into a powder with a little sugar, or mixed with molasses, and a draught composed of 10 grains of camphor and 30 or 40 drops of laudanum, may be given at bed time, to procure rest, excite a moderate perspiration, and to prevent the purgative effects of the calomel. This practice may be continued until a brassy taste be felt in the mouth, or the gums become slightly sore, spongy and swelled; if it be continued after these symptoms appear, a salivation will follow, and very much reduce the patient's strength. If the calomel proves purgative, or produces more than two stools a day, its action must be checked by giving 10 grains of powdered kino and 5 drops of laudanum, three, four or five times a day, independent of the opiate at night. When the calomel has been continued for a few days, it frequently excites severe griping, and tenesmus, or a painful straining or pressing downwards at stool, by which nothing is evacuated but slime; this may be remedied by omitting the calomel for a day or two, and taking a moderate dose of Epsom salt or castor oil. When the pain continues severe, and the fever remains high, notwithstanding the remedies employed, it becomes necessary to affect the system with mercury as speedily as possible: for this purpose a grain of calomel and 5 grains of g. kino may be given every two hours, until the brassy taste be felt in the mouth. If the kino does not prevent the purgative effects of the calomel, 5 drops of laudanum may be given and repeated occasionally.

Nitrous acid has of late been much recommended for the same purpose as mercury, and it may be tried in this disease when the use of mercury may be improper: thus, when the debility of the patient is very great; when

when the disease appears at sea with some fear of the scurvy appearing also, which is always aggravated by mercury; when repeated courses of mercury have been tried without much effect, the nitrous acid may be very properly employed. A tea-spoonful of the acid may be added to a quart of water, sweetened with sugar or molasses, and drank during the day as common drink. The quantity of the acid may be increased to two tea-spoonfuls, if the stomach can bear it, and its purgative effects may be restrained by the use of laudanum as before directed. By taking the acid for a sufficient time the gums become sore, and a spitting is produced if the medicine be longer continued.

ERYSIPELAS OF ST. ANTHONY'S FIRE, is a troublesome kind of inflammation, very apt to spread from one part to another, and repeatedly attacks those who have been once afflicted with it. Although when slight, it is rarely productive of ill consequences, yet when severe, or when improperly treated, it is often dangerous. It most frequently affects the head, face, neck, arms and legs. When the disease attacks in a trifling degree, there is merely a redness, slight swelling and stiffness of the part, with or without an eruption of small clear pustules, containing a watery liquor. These appearances continue four or five days, then gradually decline, leaving the skin rough, cracked and falling off in scales. When the complaint is in a more violent degree, especially when it seizes the face, the patient is usually affected with frequent chilly or shivering fits, sickness and vomiting; these are followed by fever, which is often very violent, attended with severe head-ach, and some-

times with delirium. At the end of two or three days, a considerable degree of redness appears; this is frequently first seen on the nose or tip of the ear, from whence it spreads over the face, head and neck, which are frequently swollen to an enormous size. The eyelids are frequently puffed up like bladders, and the patient becomes blind. The pain is sometimes severe, but in general there is rather a burning heat with a troublesome itching, than an acute throbbing pain. The inflamed part appears of a smooth shining red colour, having somewhat of a yellow tinge. This kind of inflammation may be distinguished from that which attends a common boil, by pressing the part with the finger: in Erysipelas this causes the skin to appear for a moment of a pale or nearly a white colour, while it has no effect on the former kind. Sometimes in Erysipelas a great number of small pustules, or spots, may be observed, which pour out a thin watery fluid. This disease is produced by various causes, and among others by the abuse of spirituous liquors; by exposure to a hot sun; by wounds, especially those of the head; by the bites of insects, &c.

When the fever runs high, and the head-ach is severe, the patient ought to be kept in bed, with his head and shoulders raised; his feet may be immersed in warm water, and, if costive, a moderate dose of salts may be given, so as to produce two or three loose stools, to be repeated occasionally during the course of the complaint. A draught, composed of 30 drops of laudanum, and an equal quantity of antimonial wine, may be given at bed time, and the patient may drink plentifully of barley water, rendered pleasant with lime-juice and sugar, or of any other light drink. The face may be fomented with

with cloths wrung very dry out of hot water, to which may be added a spoonful of vinegar or of spirit. All greasy applications are to be carefully avoided. To absorb the moisture which oozes from the pustules, it has been recommended to dust them with oatmeal, made warm over the fire.

Somewhat analogous to this complaint is the **SHINGLES**, which spreads round the waist with great inflammation, heat, tingling and an eruption of watery vesicles. It goes off, however, in six or eight days, requiring only rest, light diet, and some cooling physic.

INFLAMMATION OF THE EYES is attended with pain, more or less acute; redness, inability to bear the light, and an increased flow of tears. When the inflammation is violent, the patient feels as if a mote were in the eye, or as if a thorn were fixed in it; the eye-lids are swollen, the head aches, and there is much fever attending. This complaint is frequently occasioned by particles of sand, insects, &c. blown into the eye; by the smoke of burning wood; by exposing the eye to a cold dry wind, or looking too long at any bright object, especially white-washed walls. It is frequently, likewise, the punishment of drunkenness.

To cure this painful disorder, we must endeavour to remove the cause: this is particularly necessary when something is lodged under the eye-lids. We may attempt to wash it out with a little warm water, thrown in by means of a small pewter syringe, the point of it being gently introduced under the upper eye-lid: or the eye-lids may be turned back, and if a small speck be observed on the ball of the eye, it may be removed

by the feather end of a quill, or by a piece of paper cut to a point. When the inflammation continues severe, the patient must be kept in a dark room, and, if strong, half a dram or 2 scruples of jalap may be administered; but if of a weak habit, it will be sufficient to give a moderate dose of salts. To abate the head-ache and fever, the feet may be put into warm water; and to moderate the pain, 30 or 40 drops of laudanum, with as much antimonial wine, may be administered at bed time, and repeated in four or six hours, if necessary. The eye must be kept constantly wet with a lotion, composed of equal parts of vinegar and water, to half a pint of which may be added a tea-spoonful of extract of lead, and two tea-spoonfuls of tincture of opium: if this produce pain, the quantity of vinegar may be diminished, or it may be omitted; and if the patient feel uneasiness from the coldness of the application, it may be made new milk warm, taking care to cover the eye very lightly in every case. When the violence of the inflammation has somewhat abated, the applications to the eye may be made as cold as is agreeable to the patient. Cold water, or vinegar and water, with the addition of a little spirit, will often be found a good wash. In many instances it will give ease to touch the ball of the eye with a piece of feather, or with a small camel's hair pencil, dipped in tincture of opium; this gives very acute pain for a moment, but is generally succeeded by astonishing relief; and if the patient receive benefit, it may be repeated two or three times a day, using the eye water in the intermediate time. In obstinate cases, particularly when attended with much head-ache, a blister to the neck, or behind the ears, is often attended with advantage.

advantage. Shaving the head, and dipping it frequently in cold water, will be found serviceable when the complaint is going off, and in persons liable to frequent returns of the complaint, it will guard against a relapse. A little simple ointment, introduced gently between the eye-lids, will prevent their adhering together during the night and occasioning pain.

INFLAMMATION of the INNER PART of the EAR may be produced by cold, or other causes: it is attended with an acute, shooting, and throbbing pain in the ear, accompanied with severe head-ache, and a feverish state of the skin. To relieve this complaint, 40 or 50 drops of tincture of opium, and as much antimonial wine may be given in a draught, and a blister applied under the ear. Cloths wrung very dry out of water as hot as the hand can bear, may be applied over the ear, and repeated every hour for ten or fifteen minutes, to relieve the violence of the pain. A brisk purge may be given five or six hours after the opiate, and the patient should avoid every thing which is stimulating or heating. If an abscess have formed, it will be proper, when it breaks, to promote the discharge of matter by frequently dropping into the ear a little warm water; and to prevent the access of air, as well as to guard against insects, a little cotton or wool, dipped in oil, may be put into the ear.

In some persons an INFLAMMATORY SORE THROAT is the immediate consequence of exposure to cold. When the complaint is violent, there is generally great heat of the skin, much thirst and restlessness. The

throat appears almost closed from the swelling of the surrounding parts, and on attempting to swallow, there is an acute pain which frequently shoots through the ears. The disorder may often be checked by taking an emetic as soon as foreness or stiffness is felt in the throat. The bowels must be opened by a brisk purge of salts, and a piece of flannel moistened with spirit of hartshorn, or with an equal portion of hartshorn and oil, may be applied outwardly to the throat. The throat may be gargled with a mixture of vinegar, or lime juice and water; or if the swelling increase, a blister may be applied across the throat. A gargle, composed of vinegar, in which cayenne or bird pepper has been infused, and mixed with a sufficient quantity of water, is often useful in checking fore throat when employed early.

Young persons of a robust habit are frequently affected with BLEEDING FROM THE NOSE; when this occurs after using much exercise, or after a debauch, especially if preceded by or accompanied with much head-ache, throbbing of the temples, and heat or flushing of the face, the blood may be permitted to flow for some time. The same plan may be observed when the bleeding arises from external injury, especially from a blow upon the head. But when the discharge has returned so frequently as to weaken the patient, or when such a quantity of blood has been lost at once, as to produce faintness, paleness of the lips and face, and coldness of the limbs, it then becomes very serious, and danger is to be apprehended. The patient ought to be placed in a cool situation, with his head and shoulders raised, and his shirt opened at the neck. His hands ought to be
dipped

dipped in very cold water, or when there appears to be much danger, the whole body, especially the face, neck, and breast, should be dashed with cold water. If the patient become sick and faint, the bleeding generally ceases; therefore neither wine, nor spirits, nor any kind of warm liquor is to be given to rouse the patient; because it will bring back the bleeding with redoubled violence. Every thing the patient takes should be cold. Sometimes pressing the nostrils for a length of time will often stop the bleeding; or vinegar and cold water may be snuffed up the nose with advantage. When the blood flows with violence, plugs of cotton or of lint, dipped in a solution of a dram of sugar of lead in two table-spoonfuls of water, and an equal quantity of vinegar, may be introduced up each nostril, and retained there for forty-eight hours, or until they come out of themselves; and during this time the patient must be particularly cautious neither to blow his nose nor to pick it. If the body be costive, and the patient of a weak habit, or rendered so by loss of blood, a gentle dose of salts may be taken; if robust and full of blood, half a dram, or two scruples of jalap may be given. Should the bleeding recur frequently, in addition to the above-mentioned to be used during the flux of blood, 20 or 30 drops of elixir vitriol may be taken in water three or four times a day; cooling acid fruits may be indulged in, and the diet should be light and temperate. When the debility is very great, it will be proper to take half a dram of bark, or more, three or four times a day. When bleeding at the nose occurs in Scurvy, it is very dangerous, and requires in addition the remedies above-mentioned, together with those noticed under the article

Scurvy.

Scurvy. Ruspini's Styptic put on lint, or cotton, is efficacious in stopping a bleeding from the nose: it is likewise a good gargle in scorbutic hæmorrhagy from the tongue, gums, or inside of the cheeks: should any of the liquor be swallowed, it will not be injurious to the stomach.

Exposure to the night air, or to a current of air, when in a state of perspiration, wet clothes, &c. frequently excite troublesome Colds, accompanied with cough, hoarseness, sneezing, and watery eyes, which often continue for several days. The cure is in general very simple. The patient ought not to be heated by warm drinks, nor by too close confinement; it will be sufficient for him to avoid exposure to the cold, and to remain in a temperature agreeable to his own feelings. To abate the cough, and to procure a gentle moisture on the skin, 20 or 25 drops of laudanum may be taken at bed time, with a tea-spoonful of spirit of nitre, or antimonial wine, as already directed. To remove the uneasy tickling sensation in the throat, which excites cough, an emulsion composed of an ounce measure of oil (or two table spoonfuls) four ounce measure of water, and 30 drops of spirit of hartshorn, well shaken in a bottle, may be given by spoonfuls occasionally; or the patient may take honey or moist sugar, mixed with a sufficient quantity of lime-juice or vinegar, to render it agreeably acid. If pain be felt in the chest, or if the hoarseness be obstinate, a blister applied to the breast will often afford relief; the bowels should also be kept open.

COUGHS AND HOARSENESS are by no means uncommon complaints in a hot climate. When the cough is troublesome at night, 20 or 25 drops of laudanum may be taken at bed-time. A little honey rendered agreeably acid by lime-juice may be taken occasionally to remove the hoarseness and tickling in the throat. Or a little sweet oil mixed with the yolk of an egg and a sufficient quantity of lime juice and sugar to render it agreeable. In case of a fore throat, a gargle of vinegar may be used frequently, or of lime juice and water.

Notwithstanding the heat between the tropics, RHEUMATIC PAINS often affect the limbs, particularly at the joints, and are most severe when the patient is warm in bed. There is a sense of numbness in the parts affected, and a degree of coldness, as if cold water was running down them. The rheumatism is most frequent during the rainy season, or when the air is very moist, and liable to sudden changes. It usually arises from exposure to the night air in thin cloathing. When the pains affect the breast they are often removed by wearing a flannel shirt or waistcoat next the skin, and also by putting on cotton, or flannel socks, to keep the feet warm and dry. The pains, at their very commencement, may often be removed by wearing a warmer dress, and producing a gentle sweat. A tea-spoonful of spirit of nitre, and nearly the same quantity of antimonial wine, with 30 drops of laudanum taken at bed-time, will in general have the desired effect. Or instead of the antimonial wine, 5 grains of camphor may be dissolved in a tea-spoonful of spirit of nitre, and added to the 30 drops of laudanum. When the pain is severe in one
limb

limb or joint, the part may be rubbed with a mixture of equal quantities of oil and hartshorn, or of hartshorn and spirits of wine with camphor, and afterwards covered with flannel.

When the pains have been long fixed in a part, the above mentioned plan does not always relieve them: but the following mode of practice proves mostly successful. Two grains of opium, with 2 grains of calomel, are to be taken every night at bed-time, and continued till the pain is easier, or till a disagreeable brassy taste is felt in the mouth, together with a slight degree of soreness. If the pills be continued beyond this period, they may bring on a salivation. Should the pains notwithstanding this course be still troublesome, the pills, after a proper interval, may be repeated in the same manner till a slight soreness of the mouth is brought on a second time: this method has often cured the complaint, when blisters and other remedies have been employed without effect.

CASE OF RHEUMATIC PAINS. T. G. has been about two years on the coast of Africa.

MONDAY. Has been affected for a week past with very severe pains in the joints of his wrists, arms, knees, &c. which appear to be slightly swelled: he feels also severe pains in the forehead over the eyes, and a pain stretching across his breast. His skin is hot and dry; he is very restless, and complains of much thirst. To take 5 grains of camphor dissolved in a little spirit, to which a table-spoonful of water is afterwards to be added, and 15 drops of laudanum. This draught to be repeated in three or four hours. To have tea, lemonade, or burnt biscuit and water for common drink.

TUESDAY.—He sweated very profusely all the night:
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the pain in his head is gone : his skin is cool and moist : his thirst, and restlessness are greatly abated. The pains in his limbs continue as severe as before, and he is unable to move. To take 2 grains of calomel and 2 of opium every night at bed-time ; and a cupful of bitters three times a day.

THURSDAY.—The pains are something easier, and he can use his joints a little ; he has rested much better at nights than before ; feels no disagreeable taste in his mouth. To continue the pill with opium and calomel ; and the bitters as before.

SATURDAY.—The pains of his joints are considerably relieved, and he can attend a little to his work. His arms and wrists are free from pain, but his ancles are still painful and swelled. He feels no particular taste in his mouth : nor are his gums in the least sore. The pills and bitters are to be continued.

MONDAY.—He feels this morning an unpleasant taste in his mouth, as if from brass or copper ; his teeth are rather loose ; and his gums hot and slightly swelled. He complains only of general weakness. The pains and swelling are intirely gone, and his appetite is beginning to return. He is to omit the calomel, but to continue the bitters a week longer ; and if his mouth becomes forer, he is to take a gentle dose of salts.

This man was very soon restored to health, and followed his usual work for three months without feeling the smallest return of the pain. At the end of that time, by getting drunk and exposing himself to the night air, he had a very severe return of pain and stiffness in his joints, without much swelling. The calomel and opium were given to him again as formerly : and
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he soon recovered. He continued the bitters for a week after the pains left him ; and had no return of them for a year afterwards. .

COLIC PAINS are frequently occasioned by taking something which disagrees with the stomach. The pain is severe, and is chiefly felt round the navel, though sometimes it moves from one part of the belly to another. If it abates for a few minutes, it returns only with greater violence. Costiveness is generally a symptom of the cholic : it is also sometimes attended with vomiting, at other times with an oppressive sickness only, or a sensation of a load at the stomach. When the stomach is thus oppressed, or has received something offensive, a vomit must be given immediately ; and after its operation some laxative, as castor oil, if it can be retained : if not, let an ounce of Epsom salt be dissolved in a pint of water, and a cupful of it be taken every half hour till it operates. Should the stomach bear no liquid, three or four of the purging pills may be given, and repeated, if necessary, in two or three hours. If all internal medicines fail of the intended purpose, we must have recourse to clysters ; which may be composed of two ounces of Epsom salt dissolved in three gills of common warm water, or of sea water. This may be conveyed to the bowels by the usual means of a pipe and bladder, or be injected by a syringe. If it should return without producing a stool, the same application should be repeated in an hour. When the pain is extremely severe in cholic, the patient may sit for ten minutes in hot water, and afterwards take 30 or 40 drops of laudanum, which often yields immediate relief, though

not

not of long duration, unless the patient has a stool : the purging medicines and clysters must therefore be still continued. On the whole, clysters are perhaps the most effectual means of relieving the pain and obstruction of the bowels : they may be repeated every hour till the effect is produced. In cases of habitual costiveness, where the patient is tired of taking purgatives inwardly, he may obtain an equal advantage from clysters. Syringes are made for the purpose with a long tube, so that the patient can with little trouble relieve himself.

THE DRY BELLY-ACHE is a disease not more to be dreaded from the excruciating pain which attends it, than from its frequent termination in palsy. It often occurs in the West Indies, and has been attributed by many to the drinking of new rum, in which particles of lead were dissolved. House-painters, and those employed in white-lead works, plumbers and glaziers, are very liable to it also in Europe. It is sometimes occasioned by drinking cyder, or spoiled and sour wines, which have been adulterated with lead, to give them a sweetish taste.

The patient frequently complains for a day or two before he is attacked, with pain, of a sensation of weight in his belly : this is followed by a severe fixed pain in the bowels, not increased, but rather diminished by pressure on the part ; and the navel appears drawn in towards the back-bone. An obstinate costiveness attends this complaint, and there is sometimes a frequent but fruitless desire of going to stool. There is frequently vomiting and fainting, and the countenance appears of a dirty yellow. When the severity of the pain in the bowels

bowels abates, and pains are felt in the joints of the knees, feet, arms, &c. they may be considered as fore-runners of palsy. Persons who have already suffered from this disorder are liable to returns of it from cold; they ought, therefore, to guard cautiously against sudden changes of the atmosphere, by wearing flannel and preserving their feet dry and warm. The principal object towards a cure, consists in attention to procure a free evacuation by stool. Ten grains of calomel may be given at first, and two hours afterwards one or two table-spoonfuls of castor oil may be given, or the solution of Epsom salts as before directed. The oil may be repeated every hour, or every two hours, until the effect be produced. If the stomach be so much affected with sickness as to reject the medicine, 30 or 40 drops of laudanum ought to be first given, and in the space of an hour or two, purgatives may be employed. It will frequently afford more relief, both for the pain and sickness, to administer 60 or 80 drops of laudanum, in a pint of warm water or gruel, as a clyster, than to give it by the mouth. When, notwithstanding the continued use of purgatives, stools are not procured, a clyster composed of 2 ounces of Epsom salts, dissolved in a sufficient quantity of water, may be injected every two hours. It will tend greatly to relieve the pain if the patient sit for fifteen or twenty minutes in warm water, and afterwards have his belly rubbed with a dram of camphor dissolved in a table-spoonful of oil, to which has been added a tea-spoonful of laudanum. When stools have been procured, great care must be taken to prevent the return of costiveness, and the patient ought to take for

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a few days afterwards an infusion of gentian, or 15 or 20 grains of powder of Colombo twice a day.

The PILES constitute a very troublesome and painful disease, too well known to require a description. It is usually brought on by a costive state of the bowels; and as the motion of a ship has a great tendency to produce costiveness, sailors are very liable to be affected with this disease. In some cases, blood is discharged in considerable quantities; in others there is no discharge; but a number of small, hard tubercles, or knots, exquisitely painful, are felt round the fundament. As the disease is in general prevented, or relieved by keeping the bowels gently open, a table-spoonful of castor oil may be taken every two hours until it has the proper effect, or a solution of the Epsom salt, as formerly directed. The purging pills and calomel are not so suitable for this disease. The purgative must be repeated every second or third day until the disease be removed; and if the pain be great, an opiate may be given at bed time. Cloths dipped in cold Goulard water will be useful: or a liniment composed of a tea spoonful of extract of lead, with the same quantity of laudanum, and a table spoonful of sweet oil, may be applied three or four times a day.

If persons afflicted with the piles would wash the fundament with very cold water after every evacuation, they would find the practice very beneficial.

RUPTURE.—No class of people is more liable to that kind of accident called Rupture, than sailors. A rupture is a soft tumour or swelling, occasioned by a portion
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of the bowels being pushed out at some weak part of the belly. Ruptures may occur at the navel, or the upper and inner part of the thigh; but in men they most frequently appear at the groin, where the cord going to the testicle passes out of the belly. This complaint in general comes on suddenly, and soon after some violent exertion, such as pulling at a rope, straining to lift heavy weights, &c. when a tumour or swelling sometimes not so large as a walnut, is felt in the groin. This is attended with an exquisitely acute pain in the part: the stomach is affected with sickness and vomiting, and the bowels seem to the unhappy sufferer as if twisted, hence the complaint is frequently mistaken for the colic. If the patient does not attend to the first appearance of the complaint, and get the bowels replaced, the pain is aggravated to a most excruciating degree; the vomiting increases, and every thing taken into the stomach is instantly rejected. The belly becomes so exquisitely tender as not to bear the slightest touch. The skin is covered with a cold, clammy sweat: the hands and feet turn cold. After some time the pain suddenly abates; hiccough comes on, and in a very few hours death closes the scene. Although the tumour appear first in the groin, yet it gradually descends lower, until it reach the bottom of the scrotum, which, when of long continuance, it distends to an enormous size.

A rupture may be distinguished by being in general a soft swelling, attended with pain, and appearing suddenly after some exertion; by its returning into the belly (if not strangulated) when the patient lies upon his back and presses upon it; by its increasing in size, and pressing against the hand applied to it, when the patient coughs

coughs or retains his breath, and presses downwards as at stool. As soon as this accident happens, the person must instantly lay aside every kind of exertion; he must lie down upon his back with his head lower than his body, with his thighs bent, and his heels brought up close to his buttocks, and endeavour by pressure to make the tumour return into the belly. For this purpose the pressure must be made with the flat hand applied with some degree of force, but not so great as to occasion much pain. When this is not sufficient, the patient may be suspended from the back of a strong man, having his legs thrown over the shoulders of the latter, and in this situation with his head hanging downwards, the attempts to press back the tumour may be repeated. If this mode likewise fail, cloths dipt in very cold water, or in vinegar and water, or in saltpetre or common salt dissolved in water, may be applied to the tumour for the space of an hour or two, and renewed every two minutes, or before they lose their coldness. At the same time a quart of cold water may be given as a clyster in the manner above directed (see page 75) and if, as is generally the case, the patient be costive, two ounces of Epsom salt may be dissolved in it. When by these means he is so fortunate as to make the fallen portion of bowels return into the belly, he must carefully guard against a relapse. This might be produced by the smallest exertion, even by standing upright, by turning in bed, or by straining at stool, unless the part be guarded by the application of the flat hand. Costiveness must be prevented by the use of the purging pills already mentioned, or by castor oil, or Epsom salt. No person who has had this complaint, even in the slightest degree, ought to consider himself

himself for a moment secure from a return of it, perhaps a fatal return, unless he provide himself with a proper elastic truss, which must be constantly worn.

Complaints of the URINARY PASSAGES occur more rarely in hot than in cold climates. The kidneys may be inflamed by a variety of causes; by violent exercise, falls, blows, by stones or gravel forming there, &c. The disease is distinguished by a fixed, burning, or throbbing pain in the loins, immediately under the lowest ribs; on one or both sides, the pain frequently shoots down to one or both testicles, which are painfully drawn up towards the body. A severe pain is also felt in the hip of the affected side, running down the thigh, which feels as if benumbed. The patient finds the pain much increased by attempting to walk or to stand erect; and feels more ease by lying on the affected than on the sound side. The urine is voided with great difficulty, sometimes only in drops, and is generally high coloured. When the disease is violent, there is commonly much fever, sickness, and vomiting. It will be necessary to give opium to abate the severity of the pain: 40 drops of laudanum, with an equal quantity of antimonial wine, may be taken, and repeated in three or four hours, if relief be not obtained. The patient may be placed for half an hour in a bath of warm water, and when he comes out and is rubbed dry, a clyster, composed of 60 drops of laudanum, mixed in a pint of warm water and oil, may be injected, and repeated in a few hours if necessary. A mixture of hartshorn and oil, or a dram of camphor in a spoonful of oil, may be rubbed frequently over the pained part. Blisters must be avoided in this complaint.

complaint. The patient may drink plentifully of tea, gruel, rice, or barley water, or gum arabic dissolved in water. When a stone is passing from the kidneys to the bladder, nearly the same train of symptoms occurs, and the same mode of practice will be found useful.

When there is a **STONE** in the **BLADDER**, the patient feels a painful itching at the end of the yard: the urine deposits a mucous sediment, is voided with excessive pain, and frequently stops suddenly whilst passing in a full stream. The desire of making water is also accompanied with a sudden and irresistible motion to evacuate the bowels. The sufferings of the patient may be diminished by sitting in the warm bath, by taking occasionally 40 or 50 drops of laudanum internally, or having it injected in a clyster as above directed. Persons going from Europe to a tropical country, have experienced a diminution, and even an entire suspension of pain. With a view to dissolve the stone, soap has been recommended in the form of pills. Some prefer lime water, made by pouring boiling water upon shells well burnt in the fire, and decanting the clear liquor, of which a pint may be taken daily. Others give 15 or 20 grains of salt of tartar, dissolved in a sufficient quantity of water, two or three times a day: 20 drops of acid of vitriol, in water, may be taken immediately afterwards, with much advantage; see page 20.

STRANGURY, or a constant, painful, and ineffectual desire of making water, may be removed by the warm bath; by drinking plentifully of gum arabic dissolved in water, or of rice or barley water; by laudanum given

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in a clyster; or if the body be costive, by a dose of Epsom salts. Inability to retain the urine is sometimes relieved by strengthening the system, by taking bark or bitters; by the cold bath; or by applying a blister to the sacrum. Persons affected with strictures of the urethra, ought to be constantly provided with bougies, and to be instructed by a surgeon in the mode of introducing them.

A sailor, though on the eve of undertaking a long and distant voyage, not unfrequently exposes himself to venereal infection, and feels the destructive effects of it when medical assistance cannot be procured. This circumstance has induced the author to insert a few short directions for the treatment of venereal complaints; at the same time he earnestly requests, that no person who values his health, or peace of mind, will make use of them without the greatest caution, and that he will never trust to himself in situations where the advice of a regular practitioner can be obtained.

GONORRHOEA, or CLAP, is the most frequent form of this disease. It is known by a redness and slight swelling at the extremity of the urethra, or canal through which the urine passes. The urine, when voided, excites an acute scalding pain, which is particularly severe when the last drops are forced away; and there is also a greater or less discharge of whitish or greenish coloured matter, from the urethra. For the cure of this complaint, the patient must refrain from fermented liquors, spices, animal food, and every thing heating. A large quantity of watery drink may be taken, such as tea, coffee, gruel, barley or rice water, &c. in order to dilute the urine and render it less stimulating: 15 or 20 grains
of

of cream of tartar, dissolved in a cup of water, may be taken three or four times a day, or a tea-spoonful of gum arabic, dissolved in a sufficient quantity of pure water, or rice or barley water, may be drunk four or five times a day, or oftener, if the scalding of the urine be very violent. The part affected may be immersed, for 5 or 10 minutes, in warm water, several times a day. If there be much pain, 30 drops of laudanum, or more, may be taken at bed time. Besides the above, an injection may be used, composed of 15 or 20 grains of sugar of lead, dissolved in a gill of water, and used luke-warm. The quantity of sugar of lead may be increased every three or four days, 5 grains, provided it gives no pain, until it amounts to 40 grains, in the same quantity of water. The injection must be thrown up the urethra, very gently, by means of a small pewter syringe, capable of holding about a table-spoonful of liquid, and having a conical point; and it must be retained there two or three minutes. The injection may be used half a dozen times, or oftener, in a day, and immediately after making water. Great care should be taken to avoid exciting pain.

When the disease is very violent, the patient is frequently troubled with painful erections, in which the penis is forcibly bent downwards or to one side. This affection is called *chordee*. It may be relieved by taking 30 or 40 drops of laudanum at bed time, with 10 grains of camphor, dissolved as directed page 136—7.

Persons affected with *Gonorrhœa* are sometimes seized with pain in the side of the belly, loins and hips. One or both testicles sometimes swell considerably, become extremely hard, and exquisitely painful. The running

either diminishes or ceases entirely. There is frequently nausea or sickness, and a considerable degree of fever. As soon as these symptoms disappear, the patient ought to suspend the parts by means of a small bag, or a thin handkerchief tied round the waist; or what is more adviseable, he ought to confine himself to bed, and lie upon his back. A dose of salts may be taken if the body be costive, and after its operation, if there be much pain, 30 or 40 drops of laudanum will afford relief. Cloths, four times doubled, and dipped in a mixture of equal parts of vinegar and water, are to be applied cold to the swelling, to be taken off before they become warm, then to be applied as before. To a quart of the above mixture, one or two drams of sugar of lead may be added, and employed in like manner. The diet should be light, and if the patient has previously used injections, they must now be laid aside, until the swelling subside.

Small ulcers, called Chancres, frequently appear upon the extremity of the yard. These at first resemble small itchy pustules, not larger than a pin's head, and contain a clear fluid. When the pustule breaks, a small ulcer is formed, the edges of which are hard, generally inflamed, more or less painful, and its surface is covered with a whitish slough or skin. These ulcers become gradually deeper, and sometimes spread very rapidly over the surrounding parts: their progress can only be arrested by a proper application of mercury. When they are not very painful, a little red precipitate may be sprinkled upon them, and repeated once or twice at the distance of twenty-four hours, until the surfaces look clean and red. They may then be dressed with some strong mercurial ointment,

ointment, spread on lint, or covered with lint dipped in a solution of sugar of lead, and frequently wetted: or they may be slightly touched with lint, dipped in a solution of blue vitriol (see page 139.) If, however, these applications produce pain, they must be laid aside, and the chancres must be kept very clean by frequently washing with warm water, or a warm solution of sugar of lead. Mercury must be employed early, and its use should be steadily continued for five or six weeks after the ulcers are healed. Thus one grain of calomel, made into a pill, may be taken night and morning, and continued until the mouth become slightly sore, when it may be omitted for a day or two. As soon as the soreness of the mouth abates, the mercury must be resumed, and repeated in such a manner as to keep the gums tender during the whole of the cure. If the mercury prove purgative, its influence upon the disease will be lessened: that effect must therefore be prevented by opium and kino, as directed page 78. The diet should be nourishing. When the small ulcers have been healed by mercury not taken in a sufficient quantity, the throat soon after becomes ulcerated, and violent pains are felt in the forehead, shin bones, &c. which are aggravated by the warmth of bed. Copper-coloured spots break out upon the face, about the roots of the hair, and over the whole body. These symptoms shew that the constitution is deeply affected, and that the course of mercury has not been long enough continued.

A swelling in the groin, called Bubo, is not an unfrequent occurrence. When a degree of stiffness, or pain, is perceived in the groin, bubo may be suspected;

the patient ought then to avoid exercise, to use a low diet, to take a moderate dose of salts every third or fourth morning, and to rub the part very gently with equal parts of oil and hartshorn. Should an abscess form in the part, it must be allowed to burst of itself. If the discharge be small, and there be much inflammation and pain around it, a common poultice may be applied warm two or three times a day, after which it may be dressed with an ointment composed of 1 ounce of digestive, in which 1 dram of red precipitate is mixed. The internal use of mercury must also be continued, as before directed. When the prepuce, or foreskin, inflames, and swells so much that it cannot be drawn back, the affection is called Phymosis. This is generally occasioned by chancres beneath. Under these circumstances, the patient should confine himself to bed, and use in general the means recommended in swelled testicle. Cloths dipped in the solution, must be applied cold, and carefully renewed. A little warm water, or a little of Goulard's water, made warm, may be injected very gently, three or four times a day, under the prepuce. When the fore-skin has been drawn back, and swells so much that it cannot be drawn forwards again, it constitutes Paraphymosis, and must be treated with cold applications, low diet, purging, &c. as in the last complaint.

The CRAW-CRAWS, as it is called, is a kind of itch, with which the natives of Africa are much affected : it may always be cured by flower of sulphur mixed with butter ; or by oil thickened with a little wax melted in it, to which may be added a little soft soap. These

Ointments

ointments are to be rubbed on the spots, night and morning, as long as any of them are visible.

SMALL-POX.—The Small-Pox is a disease to which all people are liable once in their lives; and when introduced by contagion among those who have not had it, proves as dreadful and as destructive as the plague. This disease sometimes breaks out on ship-board, especially where there are a number of passengers: it therefore becomes necessary to give a short account of its symptoms and mode of treatment, together with some cautions respecting the manner of putting a stop to its ravages; both with a view to its cure on its first appearance, and to prevent its spreading in countries where the ship may touch, and perhaps causing the death of thousands.

This disease, like all other feverish complaints, begins with coldness and shivering, followed by great heat, except of the hands and feet, which are generally cold; thirst, and general uneasiness. There is much pain in the head, and over the whole body, particularly in the back and loins; there is also an uneasiness or pain at stomach, with sickness and vomiting. On the third or fourth day from the attack, small red spots, not unlike flea bites, break out, first on the face, then on the neck and breast, from whence they spread over the whole body. These spots gradually grow larger, until the seventh or eighth day, when they are nearly as large as peas, and are filled with a yellowish matter. About the eleventh day they appear rough at top, and begin to fall off in scales, leaving pits or depressions. During the time the small-pox are encreasing in size, the face

swells, and when the pustules are very numerous, the patient becomes blind, and flavers or spits very copiously. After continuing a few days, the swelling of the face subsides, and is followed by a similar swelling of the hands, and then of the feet. When the Small-Pox are not so numerous as to touch each other, when each pustule is surrounded with a rose-coloured circle, and when the fever abates after the eruption appears, a favorable termination may be expected. On the contrary, when the spots are confluent, or run together, particularly on the face; when they appear flat and pale; when the fever does not abate after the eruption, but rather increases, and is attended with delirium, there is much danger.

In treating this complaint, we ought to consult the patient's feelings. If he be able to move about, he should not be confined to bed, but be allowed to walk, and expose himself freely to the cool air: if obliged to remain in bed, he must be lightly covered, and must be kept cool in proportion to the severity of the fever. If the stomach be affected with much sickness, and a sense of weight, an emetic of ipecacuanha, or of tartar emetic, may be given, and the purging mixture, as ordered page 90, should be taken afterwards, if costive, and repeated occasionally, to keep the bowels open at least twice a day. For the same purpose, ripe fruits and cold acid drinks may be freely taken; and if the patient be uneasy and restless, an opiate, of 30 drops of laudanum, may be given at night. Should the throat be sore, and the patient incommoded with much saliva or phlegm in the fauces, an acid gargle (see page 86,) may be frequently used. If on the eighth day the

Small-

Small-Pox continue flat, attended with violent fever, delirium, &c. it will be proper to give the bark, with acids, and to treat the disease in the same manner as recommended in the remittent fever. Cleanliness, and a free circulation of cool air, are particularly desirable in this disease. The patient's linen must be frequently changed, and his body washed with cold water, or with vinegar and water. The diet should consist of vegetable substances, such as have been already recommended in fever, &c.

As the Small-Pox is always produced by infection, and does not arise from the state of the air, it may be prevented from spreading, by using proper precautions. Even should the disease break out on board a vessel at sea, where there are persons who have not had it, if all communication be cut off between them and the infected, the disease may be stopped, as has been experienced even in the plague. The person who waits upon the patient should always be considered as infected, and of course avoided by the crew, as well by those who have had the disease, as by those who have not; because the usual mode of conveying the disorder is by the clothes of the sick person, or of those who have visited or attended upon him. When the patient changes his linen, it ought to be immediately steeped in vinegar and water, or, which is safest, burnt; and no offensive matters should be retained for a moment in the room. When the patient has recovered, and his skin has become nearly smooth, he should not be allowed to join the crew until he be closely shaved, and washed with vinegar from head to foot. The birth occupied

by the patient, which has probably been formed only by a partition of painted canvas, ought, during his sickness, to be frequently sprinkled with vinegar, or fumigated by burning tobacco, pitch or tar, gunpowder, &c. or what will be found infinitely preferable, the nitrous acid vapour,* as mentioned below.

It may be of use to know that in all infectious diseases, the infection ceases to act at a very small distance from the patient, unless assisted by a current of air. Persons should therefore avoid standing to leeward of the sick, and be especially careful to avoid their breath, at the same time touching them as little as possible. To these precautions necessary for the preservation of health, and which are applicable to all infectious diseases, must necessarily be added strict temperance, cleanliness, and a free circulation of air. The advantage of this last will be evident when we reflect, that if a number of men in the most perfect health be crowded together, without

* In all infectious diseases, such as fever, flux, small-pox, plague, &c. the following mode of fumigation, recommended by Dr. C. Smyth, will be found of great advantage in destroying the contagion, and may very easily be put in practice. Thus, in an iron pot filled with heated sand, place a glass or china saucer, or cup, and into it put one or two table-spoonfuls of vitriolic acid, to which must be added, from time to time, some nitre, i. e. salt-petre. Copious vapours will thus be emitted, which must be made to pervade every part of the birth. Two or three such vessels may be employed, and placed in different parts of the room, under the bed, &c. the mixture being frequently stirred with a piece of glass, until the vapours cease to rise. This process may be repeated several times a day.

procuring

procuring a change of air by free ventilation, an infectious and alarming fever will inevitably be produced.

When the Small-Pox breaks out on shore, it may, by proper care, be easily prevented from spreading. The patient should be removed to a small distance, and placed in a house appropriated to the purpose, with proper attendants, who must have no communication with those in health. As soon as any one liable to the Small-Pox falls sick, he must be removed to the receiving house as soon as the nature of the disease is evident, at least as soon as the eruption shews itself; though there are instances of persons remaining until the fourth day of the eruption, without communicating the contagion, but this must always be attended with danger. As woollen cloths are much more liable to retain infection than linen, where it can be done with propriety, they ought always to be burnt. When this cannot be complied with, they must be subjected to the regulations of a strict quarantine. They, together with all kinds of goods capable of retaining infection, should be exposed for a considerable time to a current of air, not laid in heaps, but so placed that each article may be separately exposed. The heat of an oven will be found effectual, where it can be used, or the vapour of burning brimstone.

INOCULATION. When the Small-Pox has been introduced at such a number of points that its progress cannot be checked by these precautions, we still have another means in our power to oppose it, viz. Inoculation, by which we produce a milder and much safer disease. This operation, which is extremely simple, may be performed at any time before a person actually falls

sick, even though the disease should chance to break out in the same family. The natural infection, and that by inoculation have no effect upon each other ; thus, if a person inoculated should have already received the infection, the Small-Pox will run its course as if the patient had not been inoculated. No further preparation is requisite than to leave off the use of animal food, to avoid every thing heating ; and to take ripe fruits and acid drinks freely. A small scratch is to be made on the inside of one or both arms, above the elbow, with the point of a lancet or a needle, so as scarcely to draw blood ; and upon this scratch must be applied a little matter taken on the lancet or needle point, from a Small-Pox pustule, between the fifth and eighth day of the eruption. No plaister or covering is required, but the scratches may be exposed to the air till dry. About the third day the scratch appears red and slightly inflamed ; this is much increased on the fifth and sixth day, when the patient complains of a smarting pain in the spot, and some uneasiness under his arm. About the eighth day, the patient feels indisposed, and somewhat drowsy ; he is affected with chilliness, succeeded by heat, pain in the head and loins, sickness and vomiting, as in the natural Small-Pox. On the tenth day, the eruption generally appears, and the feverish symptoms go off. At this time, the pustules on the inoculated part are filled with matter. Sometimes no eruption takes place after the fever, and yet the patient is secure from the Small-Pox ; but to render him secure, it is absolutely necessary that there should be some degree of fever on the eighth day, or later, and that the inoculated spots should continue still longer inflamed. The treatment in inoculation

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is precisely the same as in the natural Small-Pox. The patient should be kept as cool as his feelings require, and be permitted to walk in the open air. Ripe fruits, cold water, barley-water, &c. rendered agreeably acid with lime-juice, may be taken freely, so as to keep the bowels open. If costive, the purging solutions ought to be given, as already prescribed; and if the inoculated spots become sore, they may be dressed with a little cerate, or simple ointment. It becomes necessary here to insert a caution, that where the inoculation is not general, the patients must be kept separate from the others, with the same care as if they had the natural Small-Pox, otherwise they will spread the infection.

The late important discovery of the Cow-Pox, renders the practice of Inoculation still more simple, and removes every possibility of danger. Those who wish to confer a benefit upon mankind, and to make some reparation to those unhappy nations who have derived only misery from their acquaintance with Europeans, and who have suffered so dreadfully from the Small-Pox, will endeavour to convey to them the blessings of the Cow-Pox Inoculation. To enter into the merits of this discovery would too much enlarge the present work; but the author earnestly recommends the practice to the serious consideration of every benevolent commander of a vessel, who may receive full information respecting the mode of practice from an useful publication (price 2s. 6d.) entitled "A concise View of the most important Facts concerning the Inoculation for the Cow-Pox, by C. R. Aikin." To which is added a plate representing the pustules in their different stages. The only obstacle to the prosecution of this plan, is the difficulty

difficulty of preserving Cow-Pox matter, in an active state, for a length of time. It may be procured from any surgeon at the port from whence the vessel sails, or from the Vaccine Institution, in London, by addressing a letter to the Secretary in Golden Square.

WOUNDS made by a sharp cutting instrument are more easily cured than those made by a blunt one, because in the latter case the part is bruised. The most alarming circumstance, and that which first excites attention in a wound is the loss of blood immediately ensuing: the real danger however does not in general depend so much upon the quantity of blood lost as upon the suddenness of the loss. The blood is circulated by two kinds of vessels, arteries and veins: the arteries carry the blood from the heart to all parts of the body, from whence it returns by the veins to the heart. A person may die in consequence of loss of blood either from a vein or from an artery, but unless very large veins be opened such as those in the neck, the upper part of the thigh, &c. the bleeding from veins is seldom such as proves dangerous, and may in general be easily stopped. On the contrary the bleeding from an artery, except it be a very small one, is always troublesome; and being apt to return, is frequently dangerous. When an artery is cut through, the end of it is sometimes contracted like the mouth of a purse, in consequence of exposure to air; and thus the bleeding is stopped. This however ought never to be trusted to, for before it takes place the life of the person may be brought into danger. The arteries have a peculiar beating motion

tion called the pulse, which is easily felt by pressing the finger upon the wrists, temples, or any other part where the artery runs upon a firm substance : it may also be seen in the large arteries of the neck, after violent exercise, or in fevers, &c. This beating can neither be seen nor felt in the veins, where the blood has a constant regular motion. We distinguish whether an artery or vein be wounded, by attending to the following circumstances. If an artery be wounded, the blood issues out in jerks or starts, and if it be a large artery, the blood is thrown to a considerable distance. When a vein is wounded, the blood flows in a regular stream. The blood from an artery is of a bright scarlet, that from a vein of a dark red colour, almost approaching to black. Fainting is the general consequence of the loss of much blood, and always gives an alarm to the by-standers, who officiously endeavour to recover the person by giving him cordials, or holding smelling bottles &c. to his nose. When a wounded person faints, the bleeding almost always ceases ; instead therefore of rousing him, by which the bleeding would be renewed, the faintness ought rather to be encouraged as a favourable occurrence. It would be most advisable at this time to lay the person upon his back ; to expose him as much as possible to the cold air ; and to give him nothing but a little cold water : the following methods may then be made use of to prevent a return of bleeding. If the blood vessel which is cut be small, bring the edges of the wound close together, and keep them so, by small pieces of sticking plaister laid across, making a gentle but steady pressure for a few hours afterward, with a cloth four or five times doubled. Or a piece of lint three or four times folded

folded and well dipped in flour, or wetted with very strong spirits, may be laid over the wound, and a bandage be rolled moderately tight round the limb. When a large artery is divided in the arm or leg, the bleeding is so profuse that death may ensue in a few minutes. The only means of preservation, is by applying an instrument called by surgeons a tourniquet; * but the instrument can only be employed during a few hours, for if it were to be drawn tight, and applied for a long time, a mortification would be the consequence. When the tourniquet is properly applied, we have the bleeding perfectly at command, and need not be apprehensive: the congealed blood may be washed away, and the bleeding vessels be detected. As soon as this is done, the vessels may be laid hold of singly, by a pair of small pincers or tweezers: or a crooked needle may be passed through each, so as to draw it out gently till a double thread can be put round it, which must be tied in a common knot. No further apprehension need then be entertained of the bleeding. If the mouth of an artery cannot easily be seen, the tourniquet must be slackened a very little, by which means the blood will be thrown out in a stream, and thus point out the hidden vessel. Where the wound is so situated that the end of the artery cannot be taken up and tied, the following plan may be adopted: a piece of

* Tourniquets should always be carried out in trading vessels; and some person on board should learn to be dexterous in the application of them. In cases of emergency, where no such instrument is at hand, a handkerchief or garter may be rolled up, tied round the arm, and twisted tight by a stick.

common

common sponge must be cut of a sufficient size, and pressed strongly into the wound, as nearly on the mouth of the divided artery as possible. Over the sponge may be applied a piece of cloth, lint, &c. four times doubled: a bandage must next be rolled closely round the limb. The tourniquet may be kept tight for half an hour or an hour, and then be gradually slackened. Before its application the sponge must be made as dry as possible, by exposure to a fire or to the sun. The sponge ought not to remain longer in the wound than ten days, as it is apt to stick too fast: after the fifth or sixth day, therefore, an attempt may be made to remove it by soaking it well with warm water, then taking hold of, and gently raising up some part of it, which may be cut off by a pair of scissars; a piece of dry lint being softly put under its edges every day: but if the sponge adheres firmly, and cannot be separated without tearing open the wounded blood-vessel, it may be suffered to remain, until it be loosened by a natural process. When a blood-vessel is wounded, in a part where neither a tourniquet, nor a circular bandage can be applied, the bleeding may generally be restrained by placing a piece of dry sponge upon the opening in the vessel, and pressing firmly upon it with the fingers during three or four hours; and in urgent cases, there ought to be a succession of persons, so that when one is weary, the pressure may be continued by another.

In every wound, if there be dirt, splinters of wood, &c. they must first be carefully removed, and the part be washed with a sponge and a little warm water. After the wound is cleansed, its edges must be brought as close as possible to each other, and kept so by small slips
of

of sticking plaister laid across them. Over this is to be applied a little tow made in the form of a cushion, and secured by a bandage rolled moderately tight round the limb. The dressings first applied to a wound, ought not to be removed for three or four days, or until there be a sufficient discharge of matter to permit them to be taken off easily. If the dressings be forcibly removed, there is a hazard of opening the wound again, and bringing on a fresh bleeding. At the second dressing, a little cerate or simple ointment spread thin upon lint, tow, or cloth, may be applied once, or if the discharge be very great, twice in twenty-four hours, until the wound be healed. If after the application of the first dressings there be much swelling and pain, a large poultice of cassada, or linseed meal moderately warm, may be applied over the part, without removing the bandage or dressings, and repeated several times a day. It must be observed, however, that if the pain and swelling be considerable, the bandage should be slackened a little. It will always be proper where the pain is great, to give 30 or 40 drops of laudanum at bed time, and to repeat the dose in a few hours, should the first not produce the desired effect. If the wound be in the leg or foot, it is generally more difficult of cure than when in the arm, or trunk of the body; and is very apt by neglect to degenerate into a troublesome ulcer: to avoid this, the leg should be constantly laid up nearly as high as the body.

GUN-SHOT WOUNDS are more dangerous than those made by a sharp instrument, because the part is at the same time bruised, and frequently much torn. It is necessary

cessary in this case, first to moderate the bleeding from the part, if it be violent, by the methods already mentioned ; and, in the next place, to ascertain whether the ball or any part of the clothes, or the wadding be lodged in the wounded part. If there be a wound on the opposite side, it is a proof that the ball has passed through the limb : nevertheless, some part of the clothes, &c. may be retained : to discover this, dip a finger in oil, and introduce it as gently as possible into the wound, at either of the orifices ; by this means, when the ball has not taken a very slanting direction, any substance lodged in the wound will easily be felt, and must be drawn out, with as little violence as possible. Indeed, if the substance lodged there cannot be extracted without using force, it may be suffered to remain ; as it will become loose, when the wound suppurates. If the ball not having passed through the limb, be so near the surface that it can easily be extracted, it must be taken out immediately ; but if it lies deep, it must be left there, care being taken to remove any pieces of rag, splinters, &c. which are within the reach of the finger. When the ball has passed through the part, a little lint dipped in a mixture composed of equal parts of oil and wine may be applied to each orifice ; and a large poultice ought to be applied over the whole. Where there is but one wound, whether the ball remains within or not, the same practice may be employed, and the poultice must be renewed three or four times a day. Pieces of rags, clothes, &c. left in the wound, are more apt to cause pain and inflammation than a musket-ball, which frequently remains for years after the wound is healed, without giving any trouble. There is frequently little or no
bleeding

bleeding after a gun-shot wound, for the first five or six days ; care should be taken, therefore, in large wounds, or where it is apprehended that a large artery may be injured, to have a tourniquet loosely applied to the limb during the first week, that in case a bleeding should come on, it may immediately be restrained. To relieve pain 40 or 50 drops of laudanum may be taken, and repeated every night as occasion requires. When the pain and inflammation round the wound are abated, and a proper, thick yellow matter appears upon it, the poultice may be omitted: the part is then to be dressed with cerate, &c. like any common wound.

In all fresh wounds attended with much pain and inflammation in the part, with restlessness, with a hot and dry skin, and a quick pulse, the patient must abstain from flesh meat, spirits, and every thing heating: for the first week, or ten days he must live chiefly upon tea, bread and butter, boiled rice, light puddings, sago, &c. and take occasionally a tea spoonful of spirit of nitre, or antimonial wine, with 30 drops of laudanum at bed time, in order to produce a gentle perspiration. The bowels should be moved once or twice a day by gentle doses of salts, &c. Should the person have been previously much reduced by sickness, he need not make any alteration in his food ; but may use a diet as nourishing, as his stomach will bear ; in slight wounds also, little attention to diet is necessary.

It has been already observed (page 3), that BLOOD-LETTING is very rarely required in Africa, and the same may be said of other hot climates. In consequence of this, no directions are given how to open a
vein:

vein: the operation is too nice to be learned from description, and in unskilful hands it may prove dangerous. Contrary to the opinion commonly received, blood-letting is not in general necessary in external injuries; and it may for the most part be dispensed with even in injuries of the head. In the latter case, it will be much safer to trust the cure to low diet, cool air, and occasional purging with Epsom salts: 30 or 40 drops of tincture of opium may be given at bed-time, with the same quantity of antimonial wine, which last may be repeated alone every four or six hours, taking care not to excite vomiting. While this plan is pursued, it will be of great service to fold round the head cloths dipped in very cold water, or vinegar and water, which should be frequently moistened.

FRACTURES OF THE RIBS are those cases of external injury in which, owing to the vicinity of the lungs, bleeding is most necessary. A fractured rib may be discovered by feeling that one of the broken ends of the rib yields somewhat to pressure, and produces a grating kind of noise. This accident is in general attended with much pain, increased by breathing, which in general is performed with difficulty. There is cough, sometimes spitting of blood, and a quick pulse. To diminish pain, and render the breathing easier, it will be proper to take away some blood. The patient should be put to bed, with his breast raised pretty high: animal food, and every kind of liquor, must be avoided. A dose of salts may be given and repeated every three or four days as occasion requires; and to relieve pain, 30 or 40 drops of tincture of opium, and as much antimonial wine may be given at night. A broad bandage, or belt, may be fastened round the

the chest, moderately tight, to confine the motion of the ribs, which will render the breathing less painful.

BRUISES OR SPRAINS, are often more painful, and when improperly treated, more tedious in their cure than even a broken bone. If the skin be not broken the part may be bathed with a mixture consisting of a pint of vinegar and the same quantity of water, to which a table spoonful of the extract of lead may be added; cloths three or four times folded and kept continually moistened with this composition, must be applied to the affected part. When the skin is broken apply a little cerate upon the sore part; and wash the surrounding swollen and bruised parts, with the same application. When the injury has been received on the leg or foot, the part should be kept constantly laid up in a line with the body to prevent its swelling and breaking out into an ulcer, which would prove still more painful and troublesome than the original complaint. Sometimes it will be found useful to cover the bruised part with a poultice of oatmeal and vinegar, which ought to be renewed twice during the course of the day. To abate the pain, 30 or 40 drops of laudanum may be given at bed time; and the bowels must be kept open by gentle purgatives, as salts, &c. When the redness and heat of the part are removed, and only a deep seated pain is felt, with stiffness on motion, the part may be rubbed three or four times a day with equal parts of hartshorn and oil; or spirit of hartshorn, sweet oil and rum, in equal quantities. In old sprains, cold sea water poured upon the part from a height, through the spout of a tea-kettle, is often of the greatest service.

ULCERS

ULCERS occur frequently on the coast of Africa from the most trifling causes, and are much more difficult to heal than in a temperate climate, where they appear to be variously modified according to the constitutions of individuals, and heal, in some, without any particular care: on the other hand, every person who has resided long in Africa, and has suffered repeated attacks of illness, acquires more or less of a depraved, or vitiated constitution, in consequence of which, any wound, bruise, or scratch, however slight, is usually succeeded by a foul spreading ulceration. When the ulcer becomes free from pain, and is covered with matter of a yellowish-white colour, having the thickness of cream, and emitting no disagreeable odour, it is in a good state; when the matter is removed by gently touching the sore with a piece of dry lint, if the surface looks red, and a number of small red points appear in it, we may conclude that the ulcer is healing, and under these circumstances, the cerate mixed with red precipitate, as directed hereafter may be applied, until the sore is healed. When the sore is dry, or covered with a thin dark coloured, or bloody and fetid matter: or when its whole surface seems to be covered with dead pieces of skin, or sloughs, it is probable that the complaint will prove obstinate. In this case a poultice made of the root of cassada boiled and beat smooth, or of linseed-meal with water, must be applied three or four times a day, and continued for three or four days, or until the discharge from the ulcer is increased in quantity, and becomes of a thicker consistence. The poultice may then be left off and the sore be dressed with an ointment composed of a dram of red precipitate mixed with an ounce

ounce of cerate. The ointment must be spread thin upon a piece of lint or tow, and laid lightly over the ulcer every day : but if the discharge be very great, the dressing may be applied twice a day. When the ulcer is upon the leg, this limb must be laid upon a chair or bed, as rest is of the greatest consequence towards a cure. In ulcers of the legs, a considerable degree of swelling often takes place towards evening about the ancles, which disappears, or is much lessened in the morning after a night's rest. This may always be prevented by swathing the leg evenly, with a flannel or callico bandage. When it has been brought on by walking, &c. it may be removed by rest, by occasionally taking a moderate dose of salts, and by wearing a roller, carefully applied. When an ulcer is in a healing state, the red flesh sometimes rises higher than the level of the skin, which surrounds the edges : this is called proud flesh, and it must be brought down to the level of the edges, by touching it every day with a little blue vitriol ; or what is better, by applying a piece of lint dipped in water, wherein as much blue vitriol has been dissolved as the water will take up. When the new flesh is reduced to its proper level, the sore appears of a cherry colour, and is covered with a small quantity of thick, yellowish coloured matter : it may then be dressed with a little cerate spread upon lint or tow ; or if there be a great quantity of matter a little dry lint may be first applied to the sore, and the other plaister put over it. When an ulcer is very hot and swollen round the edges, the sound skin round the sore appearing likewise red, and inflamed, a poultice of cassada, or linseed-meal ought to be applied several times a day, until the redness and swelling

swelling on the edges of the sore be removed or abated. An ulcer heals always from the edge towards the center: a very fine skin or film being first formed at the edge all around, and gradually spreading over the whole sore.

As ointments are very apt to become rancid in a hot climate, and thereby irritate an ulcer when in a healing state, the following application will often be found of use.—Take four parts of honey and one part of wax, melt, and afterwards stir them together till the mixture be cold. When an ulcer is filled up with new flesh, and only wants skinning over, small strips of lint, about a quarter of an inch broad, may be spread with this ointment and laid upon the edges of the ulcer, its central part being covered with a piece of dry lint. If however there is not matter sufficient upon the sore, to allow of the lint being easily removed, it must never be rudely torn off, but may be suffered to remain as long as it adheres: and very often the sore will heal underneath it, before it be sufficiently loosened to permit its being separated, without tearing off the tender surface. In ulcers of long standing, a generous diet will be found of use. When the ulcer is upon the leg, or foot, and the patient cannot remain at rest, a flannel or callico roller about three fingers breadth must be applied, in the morning, moderately tight round the leg, from the foot to the knee. When ulcers break out after a fever, or when the patient has been weakened by some other disease, it is of the utmost consequence to endeavour to restore his general health; for unless this can be accomplished, it is probable, whatever attention may be paid to it, that the ulcer will never heal. A good nourishing diet must be used, and a tea-spoonful of bark

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taken

taken four times a day, or oftener if the stomach will bear it. When there is much pain preventing sleep, one or two grains of opium may also be taken at bed time.

Such is the difficulty of healing ulcers in a hot climate, that they frequently resist every mode of application, and continue for weeks or months in the same state. In these cases it will be found useful to vary the applications. The surface of the ulcer may be sprinkled with powder of rhubarb, or of Colombo every day, so long as it appears to agree with the sore, and does not excite much pain. Sometimes it is found serviceable to sprinkle powder of Peruvian or Angustura bark, to a considerable thickness over the ulcer; this may be either the whole application, or the bark may be moistened several times a day, with vinegar, or vinegar and water, or with lime juice; or, if that should excite much pain, with lime juice and water. A cloth, four fold, and wet with one-third vinegar and two-thirds water, may also be applied. These applications will be found especially useful in scorbutic ulcers; at the same time bark and lime juice may be given liberally internally. When an ulcer has been long stationary, and is of an indolent nature, unattended with pain, its surface may be covered with Peruvian bark, and moistened with oil of turpentine. Whatever applications are made, unless great attention be paid to cleanliness, and to the renewal of the bandages frequently, the ulcer will not heal. The patient should not sleep in a confined place, nor among a number of people. The air of a prison, hospital, or other close, crowded place, is of itself sufficient to make Ulcers spread. The diet ought to be nourishing:

nourishing: salted meats and spirituous liquors should be prohibited.

BOILS, or small inflamed tumours, are often very troublesome to persons recovering from fever, or who are otherwise in a state of debility: they are seldom larger than a walnut, often as small as a pea. When they are very hard and painful, and of a shining red colour, they may be bathed frequently with cloths dipped in hot water: and a poultice of oatmeal and Goulard should be applied warm three or four times a day. As soon as the top of the boil appears yellowish, and becomes soft, it may be opened with a needle, and the matter may be gently pressed out. The poultice should be continued for a day or two, and the sore be afterwards dressed with cerate or simple ointment upon lint or rag. When a poultice cannot be conveniently kept on, a little sticking plaister spread on cloth, or turpentine may be applied: this very soon causes the boil to suppurate, but it is not so easy an application as a poultice. When the pain is severe, two grains of opium may be taken at bed time, and a gentle laxative, when necessary.

BURNS, or SCALDS. As soon as the accident is received, if the part be dipped in spirit of wine, or strong vinegar, and kept there for some time, the pain will be very much abated. Cloths wet with a mixture of spirit, and vinegar, in equal proportions, half an ounce of extract of lead being added, must be afterwards kept constantly applied, and moistened as often as they become dry or warm. By pursuing this plan the pain will

subside in a very few hours, and the inflammation be prevented from spreading. When small blisters appear on the skin, they may be opened with the point of a needle, or a pair of scissars, and the water may be gently pressed out, care being taken at the same time to prevent the access of air. The skin should not be removed, but left as a defence to the tender parts below. When the pain is severe, 30, 40, or 50 drops of laudanum may be taken immediately, and repeated if necessary every night at bed time. As soon as the pain is, by these means, nearly removed, the sore may be dressed with a little cerate, or oil and wax melted together. If the burn has been very severe and a part of the skin turns black, with an appearance of mortification; after the pain has abated by the use of spirit of wine and vinegar, a poultice of cassada, or of oatmeal and Goulard may be applied warm, and repeated three or four times a day, until the dead part be thrown off. The ulceration may then be dressed with cerate, or simple ointment in the usual manner. An opiate may be given at night, and a dose of salts taken occasionally to keep the bowels open. The diet should be that recommended in wounds, &c.

Since the above was written, a new mode of treating burns and scalds, has been introduced by my friend Dr. Kentish, of Newcastle, which has been found uncommonly successful. Some oil, or spirit of turpentine is to be heated by standing in a cup placed in hot water, and with this the injured part is to be bathed. It must then be covered with a liniment composed of basilicon, or of an equal quantity of oil and wax rendered nearly as thin as honey, by means of spirit of turpentine, and

and spread upon soft cloth. This will be found to abate the severity of the pain, but it will be proper to give from 40 to 60 drops of laudanum immediately after the accident. If the injury be extensive, the patient ought to be put to bed as soon as the part is dressed, and if seized with a cold shivering, as generally happens in large burns, a glass of spirit, with an equal quantity of hot water, or a glass of hot negus, or mulled wine, may be given. Bottles of hot water, or hot flannels, may be put to the feet, and an additional quantity of clothes on the bed, till the natural heat be restored. The dressings must be repeated only once in twenty-four hours. At the second time of dressing, instead of bathing the part with oil of turpentine, it must be bathed with rum, brandy, or any other spirit, made warm, and immediately covered with the liniment above directed. This must be continued until matter is formed round the edges of the burn, and the dead skin is loose, and ready to be thrown off. To avoid giving pain, the liniment must now be laid aside, and the sore be dressed with cerate or simple ointment. If the discharge of matter from the sore be very great, it may be covered with a quantity of finely powdered chalk; and the patient should be confined to a vegetable diet, and take a gentle dose of salts every four or five days. Twenty-five or thirty drops of laudanum may be given every night to abate pain or restlessness.

EXCORIATION, or CHAFING, frequently takes place under the arms, between the thighs, &c. after labour or strong exercise. It may generally be prevented by frequent washing with warm water. The cure of it is

soon accomplished by washing the chafed parts with a tea-spoonful of the extract of lead mixed in a pint of water, to which a table-spoonful of brandy is likewise added. In the same circumstances, or often through the want of cleanliness, excoriations happen behind the glans, and underneath the prepuce; which are usually soon relieved by the mode of treatment above mentioned.

Fatal accidents are sometimes occasioned by Poisons taken into the stomach, such as arsenic, white lead, verdigrease, &c. In all these instances, vomiting ought to be excited immediately, as above directed, and the patient should drink freely of warm water, milk, where it can be procured, fat broths, or warm water and sweet oil. After the stomach is sufficiently cleansed, a large dose of Castor oil, or Epsom Salt, should be given to carry the hurtful substance downwards. Violent sickness and vomiting, with violent contraction of the limbs, and muscles of the belly, severe colic pains, cold sweats, fainting, &c. sometimes come on a few hours after a meal, in consequence of the food having stood in copper vessels.—The same mode of treatment must be adopted as in the other cases.

The BITES and STINGS of POISONOUS INSECTS, as the centipes, tarantula, scorpion, &c. are attended with severe pain, which frequently continues several hours. These wounds are not dangerous, and will heal without any application. The pain may be abated by taking 40 or 50 drops of laudanum: and if it can be done conveniently, the part may be held for some time in

in warm water, and be afterwards rubbed with equal parts of rum or brandy, and laudanum.

COCKROACHES, ants, and other insects, often creep into the ear, and create intolerable pain. They may be killed almost instantaneously by pouring a few drops of sweet oil into the ear. When proper means have not been used to remove them, inflammation of the inner ear may be produced, requiring the mode of treatment directed page 83.

SUBMERSION, OR DROWNING. Persons who unfortunately fall into rivers, &c. are often neglected when taken out, from their being apparently dead, though by proper attention life might have been restored to them. It is impossible to determine how long a body may remain under water, and yet recover animation : in some instances, a very few minutes have proved fatal, notwithstanding every possible exertion ; while in others, persons have been restored to life after remaining near half an hour in the water. Such instances therefore should encourage us to make the attempt in every case, however unfavourable the circumstances may at first sight appear. The principal aim must be, 1. To restore the motion of the lungs as in natural breathing. 2. To restore warmth to the body.

1. As soon as the body is taken out of the water, it should be undressed, rubbed dry, and laid upon a matrafs, straw, &c. with the head and breast moderately raised : the froth and slime must be taken out of the mouth by introducing a feather, or the finger wrapped up in a piece of cloth. Motion must be given to the lungs by gently filling them with good air, which may

be done by means of a common pair of bellows, or where these cannot be procured, by the mouth of a healthy person. The nozzle of the bellows should be introduced into one of the nostrils, while the other nostril and the mouth are kept closed, in order to prevent the escape of the air. At the same time, to prevent it from passing into the stomach through the gullet, which runs behind the wind pipe, some person must press gently upon the projecting, or bony part of the throat. When these steps have been taken, the air should be gradually discharged from the bellows, by which means the breast will be raised a little: the ribs must then be gently pressed down, to expel the air received, as is done in natural, easy breathing. This plan of inflating the lungs with air by a pair of bellows, or from the lungs of a healthy person, and of again pressing it out, must be continued without interruption for one or two hours at least; as many have been restored to life after longer trials, extending even to four hours. If during this time any spontaneous breathing returns, the artificial inflation may be left off, or only used occasionally to assist the lungs when their action ceases, or appears very weak.

2. While the above plan is in execution, three or four persons ought to be employed in attempts to warm the body, by rubbing with their hands, or with flannels, the back, belly, arms, thighs and legs. The rubbing must be performed gently at first, and afterwards more briskly. When the body feels very cold, it will be better to make these attempts in the shade, but if a considerable degree of warmth still remain, or has been excited artificially, the body may then be exposed to a hot sun.

sun-shine. A little spirit of hartshorn or snuff may be occasionally held to the nose; or it may be tickled with a feather. The body may now and then be turned from the back to the right side, and back again; but it should not be shaken in a rough manner. Rolling upon a cask, or hanging up a body by the heels is never to be attempted. Should the body at length become rather warmer, and a slight beating of the heart be perceived, or should a groan, or sigh escape, though at long intervals, there is every reason to hope for complete success. When at length the breathing is in some measure restored, the person ought to be put into bed (his head and breast being raised) between two naked persons, who may still continue to rub or gently shake the body, taking care not to press upon the chest for fear of interrupting the breathing. While he is in bed, or indeed before, hot bricks, &c. may be applied to the feet, and renewed occasionally. A little hot wine, or spirit and hot water may be given by tea-spoonfuls at a time as soon as the power of swallowing has returned. When the person has somewhat recovered, a clyster, or a gentle dose of salts or castor oil may be employed to empty the bowels. Sago, boiled rice, &c. with wine, should be used for food during the first two or three days after recovery. Not more than six or eight persons should be admitted round the body; especially if it be carried to a confined place, which is often done, but ought always if possible to be avoided.

Of the Weights used in Medicine.

The troy pound is that which apothecaries use in compounding their medicines : it contains twelve ounces. The pound and ounce are exactly the same as those employed for weighing gold ; but the ounce is differently divided. The goldsmiths divide their ounce into twenty pennyweights, and each pennyweight into twenty-four grains : the apothecaries divide their ounce into eight drachms, (or four hundred and eighty grains) : the drachm is divided into three scruples, (or sixty grains) ; and the scruple into twenty grains.

The weights are thus marked :

The pound . . .	℔ i	contains . . .	℥ xii
The ounce . . .	℥ i	— . . .	℥ viii
Half an ounce . .	℥ fs	— . . .	℥ iv
Two drachms . .	℥ ii	— . . .	℥ vi
One drachm . .	℥ i	— . . .	℥ iii
Half drachm . .	℥ fs	— . . .	℥ ifs
Scruple . . .	℥ i	— . . .	gr. xx
Half scruple . .	℥ fs	— . . .	gr. x

Grain weights are thin pieces of brass with dots upon them, to denote how many grains each weighs.

Half an ounce measure of any fluid is equal to the contents of a common table-spoon.

A List of medicines, with the quantity sufficient for
twenty men for one year.

A.	Powder of Peruvian bark	℔ x
B.	———— Angustura ditto	℔ iv
C.	———— Colombo	℔ j
D.	———— Rhubarb	℥ x
E.	———— Ipecacuanha	℔ j
F.	Tartar emetic	℥ ii
G.	Antimonial wine	℥ viii
H.	Opium	℔ fs
I.	Laudanum	℔ j
K.	Calomel	℥ xii
L.	Sweet spirit of nitre	℔ j
M.	Oil of mint	℥ iij
N.	Huxham's tincture of bark	℥ xii
O.	Spirit of lavender	℔ j
P.	Epsom salts	℔ x
Q.	Camphor	℥ xii
R.	Gentian root	℔ vi
S.	Cream of tartar	℔ iv
T.	Castor oil	℔ vi
U.	Gum arabic	℔ iii
V.	Bilious or purging pills, N ^o 340.	
W.	Magnesia	℔ ij
X.	Salt of tartar	℔ j
Y.	Diluted vitriolic acid	℔ j
Z.	Diluted nitrous acid	℔ fs

- | | | |
|----|---------------------------|-------|
| 1. | Cerate | ℔ iij |
| 2. | Simple ointment | ℔ iii |
| 3. | Red precipitate | ℥ vj |
| 4. | Blue vitriol | ℥ ij |

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5. Blister

*Drawing plaster to be spread
rather and applied to boils -*

5. Blister plaster ℞ iii
6. Powder of Spanish flies ℥ iv
7. Extract of lead ℞ ij
8. Sugar of lead ℞ j
9. Spirit of hartshorn ℞ ij
10. Flowers of sulphur ℞ x
11. Sticking plaster spread on cloth.
12. Tow, lint, rags.

Stores for the Sick.

Barley	℞ xij
Sago	℞ x
Tapioca	℞ x
Portable soup	℞ vi
Vinegar	℞ viij
Concrete acid of lemon	℞ ij

To the above articles should be added, sugar, tea, coffee, molasses, onions.

A. *Peruvian Bark*. The use of this remedy has been already sufficiently noticed.

B. *Angustura Bark*, is used in the same cases and in the same quantity as the Peruvian bark; in fluxes however, after the bowels have been sufficiently opened by purgatives, it is more useful than the other bark. It likewise contributes much to strengthen the bowels when weak, or when a diarrhoea has continued for some time. It may also be employed in those cases where the Peruvian bark is apt to be too purgative.

C. *Powder of Colombo*.—This is a very excellent bitter. A dose of 15 or 20 grains of it taken two or three times a day in water, strengthens the stomach, and often
removes

removes sickness and vomiting in delicate constitutions. Patients recovering from fever, who are still weak and cannot bear the bark, will find themselves much benefited by the use of colombo.

D. *Rhubarb* is a very gentle purgative, and may be given when any thing has disagreed with the stomach and bowels. Thirty grains of it taken in a little water, or warm water and a little spirit, will generally remove a looseness.

E. *Ipecacuanha* is one of the gentlest vomits which can be administered. When the stomach and bowels have been disordered by any indigestible food, &c. the offensive matter may be discharged by giving 20 or 25 grains of ipecacuanha, and a dose of rhubarb the following morning. In fluxes ipecacuanha is not so effectual a vomit as the tartar emetic; and in fevers, when there is costiveness, a grain or two of emetic tartar should be added, to render the ipecacuanha more quick in its operation, and to move the bowels. Twenty-five or thirty grains of ipecacuanha make a sufficient dose for a strong man. A small basin full of warm water or tea may be taken as soon as sickness is excited, and may be repeated every time the patient vomits. In general three or four small basins of tea, or warm water, will suffice to work off any emetic: when more is swallowed, it loads the stomach, and sometimes prevents the intended effect.

F. *Tartar Emetic*.—Great caution should be observed in using this medicine, as it is a very powerful emetic, and when given in too large a dose, may be attended with fatal effects. A single grain, or for very robust persons, in whom the action of vomiting is not easily excited,

excited, 2 grains of tartar emetic, mixed with 15 or 20 of ipecacuanha, make a safe and effectual vomit; it is quicker in its operation than ipecacuanha alone, and does not produce that continued distressing sickness which tartar emetic usually occasions when given singly. This remedy being very apt to purge briskly, ought not to be given as an emetic in cases of looseness. In other disorders it may be used alone in the following manner; dissolve 3 grains of emetic tartar in a pint of water, and give 3 table-spoonfuls every fifteen minutes till it excites vomiting, when it should be discontinued. In this manner it will purge more certainly than when the whole quantity is taken at once, and is therefore very useful at the beginning of fevers, or fluxes. Two or three drams of cathartic or Epsom salt added to the solution, will increase the purgative effect, if that should be thought necessary.

G. *Antimonial Wine* is of the same nature as the last mentioned article. A table spoonful of it will generally excite sickness and vomiting: its chief use, however, is to produce a sweat, which it commonly does in the dose of a tea-spoonful, more especially if 25 or 30 drops of laudanum be united with it.

H. *Opium* is the most efficacious of all known remedies in relieving pains of the human body. Two grains of it in a pill form a sufficiently large dose; and are often retained on the stomach when liquids are rejected. The repeated use of it is apt to bring on costiveness, wherefore gentle purgatives must be occasionally interposed.

I. *Laudanum*; *Thebacic Tincture*, or *Tincture of Opium*. — This is opium dissolved in a certain proportion of spirit, so that small doses of it can be given with greater exactness.

actness than of the solid opium. Thirty drops in a little of any liquid is a proper dose for a man. It does not always procure sleep, but generally keeps the person who takes it easy and quiet during the night.

K. *Calomel*.—This is a mercurial preparation, used either as a purge in the quantity of 6 or 8 grains, or as an alterative in smaller doses frequently repeated, until it renders the mouth sore and brings on a slight spitting. Six or eight grains of it will generally produce two or three stools: if it has not the desired effect within twenty-four hours, a dose of salts, castor oil, &c. must be given to prevent the mouth from being made sore. When it is intended to produce a salivation, one grain may be taken night and morning, or two grains at once every night. As soon as a disagreeable taste of copper or brass is perceived in the mouth, or when the gums become tender, hot, and rather sore, the medicine must be discontinued some time, lest the salivation be rendered too violent. If the bowels be costive, a dose of salts will also render the effects of the mercury less severe. When this remedy is taken, acids ought to be avoided, even the juice of lemons and oranges, as they are apt to cause griping pains in the stomach and bowels. Calomel does not act more violently as a purgative when given in a considerable dose than in a moderate one: neither is it more apt to gripe in a larger dose. It may also be observed that a boy of fourteen years is not more severely purged by 6 or 8 grains of calomel, than a man. The calomel may be made into pills with a little soft bread, or mixed up with molasses. A dram of calomel mixed with an ounce of pomatum, hog's lard, or of wax and oil melted together, makes an ointment to kill vermin in the head, &c.

L. Sweet

L. *Sweet Spirit of Nitre*.—Thirty or forty drops may be taken five or six times a day in water. It contributes much in fevers to preserve a gentle moisture upon the skin, to abate the thirst, head-ache, and restlessness; it may also be added to the patient's common drink. It frequently gives relief in the gravel, taken in the quantity of 60, 80, or even 100 drops at bed-time, alone, or joined with 30 drops of laudanum. When a copious sweat is required, a tea-spoonful of this medicine and as much antimonial wine, may be taken in water, and repeated in six or eight hours: 30 drops of laudanum sometimes make an useful addition to the first draught.

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hermin M. *Oil of Mint*.—This is chiefly used as a cordial. In sickness at stomach, or when medicines such as the bark, &c. cannot be retained, ^{ten} a ~~single~~ drop of this oil added to each dose frequently removes the nausea. Six ^{a tea-spoonful} or eight drops of the oil rubbed with a little sugar and about a tea-spoonful of powdered gum arabic, and then gradually united with a pint of water, makes the ^{peppermint} mint water, of which one or two table spoonfuls may be given in pains of the stomach and bowels arising from wind.

N. *Huxham's Tincture of Bark*.—The quantity of bark contained in this preparation is trifling, being not sufficient to stop the slightest ague fit. A tea-spoonful of it added to the bark, or bitters, may render them more agreeable to the stomach, and somewhat increases their efficacy. When taken occasionally with water, it seems only to answer the purpose of a dram.

O. *Spirit of Lavender* may be used in the same manner as the above, to render medicines less nauseous to the stomach. In cholic pains a tea-spoonful of it taken in two table-spoonfuls of mint water, with the addition of

30 or 40 drops of laudanum, frequently relieves the pain.

P. Cathartic, or Epsom Salts. A table-spoonful of them dissolved in a little salt or fresh water, operates as a gentle purgative. To render the solution more agreeable to the stomach, a little spirit, lime juice, and sugar, may be added.

Q. Camphor. Six grains of this medicine dissolved in a few drops of brandy, and rubbed with a little sugar and gum arabic, two table-spoonfuls of water being gradually added, may be taken every two or three hours. It frequently removes those violent head-achs so distressing in fevers; and is also serviceable in rheumatic pains. Thirty drops of laudanum, and as much spirit of nitre, may be occasionally added to it, and will act very powerfully as a sudorific. A dram of camphor dissolved in two table-spoonfuls of any spirit, or as much palma oil, is extremely useful when well rubbed on parts affected with rheumatic pains, or which have been bruised or sprained.

R. Gentian Root is a very strong bitter. Upon 3 drams of the root, cut small, a pint of boiling water must be poured, and left to stand for twelve hours; after which it may be strained through a cloth for use. The infusion is rendered more agreeable to some persons, by adding to the gentian the outer rind of one or two limes, and after it is strained, two ounce measures of spirit. A wine glassful of this bitter infusion may be taken three or four times a day: it is much preferable to bitters made with spirit alone.

S. Cream of Tartar. This is a very pleasant acid, and when dissolved in water, may be used instead of lime-juice

juice as a cooling drink in fevers. Half an ounce, or 6 drams dissolved in warm water, is a gentle purge, and is of great use in dropfical complaints, by increasing the quantity of urine.

T. *Castor Oil*, in the dose of one or two table-spoonfuls, is generally a speedy and effectual purgative. When the first dose of the oil has no effect for four or five hours, the same quantity may be given every hour till it operates. The best mode of administering this medicine, is to put the requisite quantity of it into a wine-glass containing a table-spoonful of water, by which means its unpleasant taste is in some degree prevented. To some stomachs the addition of a little spirit renders it more agreeable.

U. *Gum Arabic*.—Half an ounce or an ounce of this gum dissolved in a pint of rice or barley water, may be taken as a common drink in purgings, or long-continued fluxes.

V. *Bilious or Purging Pills*.—In all cases of costiveness, and when the bile seems to be too abundant, two, three, or four of these pills taken in the morning will be found of great use. They are prepared as follows: take an ounce of aloes, 2 drams of salt of wormwood, and half an ounce of liquorice, or extract of gentian; mix, and make these ingredients into one hundred and seventy pills.

W. *Magnesia*.—A tea-spoonful taken in water affords relief for the heart-burn, or acidity in the stomach. In the dose of 2 or 3 tea-spoonfuls it proves an easy laxative.

X. *Salt of Tartar*.—This is chiefly employed in combination with lemon juice, or the concrete acid of lemons, as directed page 20. The compound is more grateful

grateful and more advantageous, if taken while in a state of effervescence, immediately as the ingredients are added together.

Y. *Diluted Vitriolic Acid*.—From 10 to 30 drops of this acid may be taken in water two or three times a day. When taken along with the bark it is a good auxiliary, and often prevents the costiveness which the bark alone would occasion. Its use in combination with magnesia is mentioned page 20.

Z. *Diluted Nitrous Acid*.—This acid strengthens the stomach, and is a powerful antiseptic. An useful beverage for persons affected with putrid fevers, or with the first symptoms of scurvy, may be made by putting 30 drops of it, or somewhat more, to a quart of water, and adding sugar enough to suit the patient's taste.

Both the above acids are best kept in phials, having ground glass stoppers; and they should be dropped out of the bottle with attention, as they injure the colour and texture of all linen or woollen cloth on which they fall.

EXTERNAL APPLICATIONS.

No. 1. *Cerate*.—A little of this ointment spread upon lint, tow, or rag, is a good application to wounds, ulcers, &c. This and all other dressings should be laid lightly over the surface, not pressed in between the edges of the sore. When spread upon cloth, it is also a good application after a blister; if any water be retained in the blistered part, the vesications may be snipped with a pair of scissars to let it out: but the skin must not be removed, as it serves for a defence to the tender parts underneath. A plaintain leaf makes a cool and pleasant dressing for a blister.

2. *Simple*

2. *Simple Ointments* may be made by melting together as much yellow wax and oil as will become sufficiently stiff for an ointment. They are useful for nearly the same purposes as the last article.

3. *Red Precipitate* is a very beneficial application to foul ulcers. One dram of it mixed with an ounce of either of the last mentioned ointments, forms one of the best common dressings for them. When the sore is covered with a foul, dead skin or slough, a little precipitate sprinkled over it renders it clean, and makes it look red and healthy. By the same means the new flesh, or as it is called, the proud flesh, is prevented from rising above the proper level.

4. *Blue Vitriol*.—Two drams of this dissolved in an ounce of water, may be applied by means of a little lint, to the edges of ulcers when there is proud flesh. Or a piece of lint the size of the sore may be dipped in the solution and laid over its surface: if the new flesh still continues too high, it may be repeated at the next dressing, or as occasion may require.

5. *Blister Plaster*.—This must be spread upon thin leather, but not with a hot knife, which would destroy the power of the flies.

6. *Powdered Spanish flies*.—In order to render the effect of a blister stronger, and more certain, some of the powdered flies may be sprinkled over its surface and well pressed in with the finger. Blisters require in general twelve hours to produce their effect.

7. *Extract of Lead*.—Two or three spoonfuls of this mixed with a quart of water,* two table-spoonfuls of

* Or half water and half vinegar.

spirit being added, form Goulard's lotion. It is very useful for sprains, &c. Cloths wet with this lotion must be kept constantly applied to the part, and moistened as often as they become warm or dry. Twenty drops of the extract added to two ounce measures of rain water, make a cooling wash for sore eyes.

8. *Sugar of Lead* is used in the same manner, and in the same cases as the last. Two drachms of it may be added to a quart of water.

9. *Spirit of Hartshorn*.—A table-spoonful of it mixed with as much oil, or common spirit, is employed with advantage to rub bruises or sprains, after the heat and tenderness of the part have been abated by the application of Goulard's lotion for a few days. It is likewise useful when applied to the nostrils, or rubbed on the forehead and temples in head-ache, faintings, &c.

10. *Flowers of Sulphur*.—This, when rubbed up with butter, or simple ointment, is applied to the spots in the crawcaws or itch, which it presently cures. One or two tea-spoonfuls of the powder mixed with a little molasses is a gentle purge, frequently found useful in the piles.

The abovementioned doses of medicines are intended for a full grown man: a boy of twelve or fourteen may take half the quantity. To prevent mistakes, those medicines which are to be taken internally, are distinguished by the letters of the alphabet; those which are used externally are marked with numerals.

It will be very proper to have the name of each medicine pasted upon the side of the bottle or jar which contains it: and lest this should be torn or dirtied, the letter

of

of the alphabet, or number belonging to each medicine, should also be pasted upon the bottom, so that it may always be known by referring to the list.

The ointments should be kept in jars with painted tin covers: all the medicines should be put in bottles with ground glass stoppers; by which means only can they be preserved in good order for any considerable time. Corks covered with wax do not sufficiently keep the powders from moisture or damp: besides, cockroaches are very apt to eat through the wax and destroy the corks.

The most convenient form for the medicine chest will be an oblong square, having partitions running along the sides and ends, at the bottom, to receive the larger bottles; this will leave an empty space in the middle, where the mortar, tow, lint, &c. may be put. At a proper height above the lower bottles, a similar set of partitions should run along the sides and ends, which would also leave a space in the middle to be filled up by a kind of box divided into partitions if necessary, and made to be taken out and put in at pleasure. The chest ought to be secured by a good lock to prevent improper persons from making free with its contents.

The following utensils are necessary for the medicine chest.

1. A half pint marble, or glass mortar.
2. A box of scales, which may be of the size commonly used for weighing gold; and a set of weights, not extending higher than the half ounce and ounce troy.
3. A spatula, or knife for spreading plasters.
4. A small funnel.
5. A pewter measure, the upper part of which contains an ounce, and the under part half an ounce.

6. A

6. A large pewter syringe for clysters, having two pipes, one curved, so that the instrument may be used by the patient himself.

7. A few small gallipots, phials, corks, &c.

[Omitted after Rupture, page 96.]

Rupture should be carefully distinguished from SWELLING with INFLAMMATION of the TESTICLE. The latter takes place when a blow has been received on the part, or when a man has bruised it by falling on any hard substance. The testicle becomes enlarged, and very painful, with great heat, and redness of the scrotum. Sometimes the person hurt is sick, and vomits immediately after the accident; but this does not always prove the case. When the testicle is very much inflamed, the part becomes so tender that the patient cannot bear the least pressure to be made on it: he generally complains of sense of weight and uneasiness extending to the loins, and cannot stand or walk without suffering great pain. The same symptoms occasionally arise from a venereal affection, likewise in consequence of taking cold; and they are often connected with a considerable degree of fever. This disease requires early and particular attention, otherwise matter may form in the part, and the substance of the testicle may be injured or destroyed. As soon therefore as the testicle is inflamed, the man should confine himself to his bed, and apply ten or twelve leeches to the scrotum.* When the bleeding has ceased,

* If leeches cannot be procured, it may be adviseable, especially in robust habits, to let blood from the arm, or from the veins of the scrotum.

a poultice

a poultice, consisting of Goulard's water and linseed, must be applied, and renewed three times in twenty-four hours. It will also be proper to give a purgative, consisting of 5 grains of calomel, mixed with treacle or honey, at bed-time, and 30 grains of jalap, with an equal quantity of cream of tartar, in the morning. This physic may be repeated once in three days, until the inflammation be subdued. When the man is able to rise and walk about, he ought to wear a bag-truss, and wash the scrotum, or bag which contains the testicles, with brandy, two or three times a day. If matter should form, the poultice must be continued until the part be nearly healed, when a little dry lint and ocreate will complete the cure.

FINIS.

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